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SDMS Document



67229

GEOLOGIC AND WELL CONSTRUCTION LOGS  
102ND STREET LANDFILL REMEDIAL INVESTIGATION  
NIAGARA FALLS, NEW YORK

eo

rans

**GEOTRANS, INC.**

209 Elden Street, Suite 301, Herndon, Virginia 22070 USA (703) 435-4400

000394

May 15, 1986

Mr. Kevin Lynch  
USEPA Region II  
26 Federal Plaza  
New York, N.Y. 10278

Dear Kevin:

Enclosed are 4 copies of geologic logs that Earth Dimensions prepared for the following wells and borings:

OW-31	OW-41	OW-50	MW-1	MW-12	MW-22
OW-32	OW-42	OW-51	MW-2	MW-13	
OW-33	OW-43	OW-52	MW-3	MW-14	
OW-34	OW-45	OW-53	MW-4	MW-15	
OW-35	OW-46	OW-54	MW-5	MW-16	
OW-36	OW-47	OW-55	MW-6	MW-17	
OW-37	BH-47B	OW-57	MW-7	MW-18	
OW-38	BH-47C	OW-58	MW-9	MW-19	
OW-39	OW-48		MW-10	MW-20	
OW-40	OW-49		MW-11	MW-21	

I recommend that the geologic data from these and older logs be input to the 102nd Street database system, and that the following maps be plotted: (1) NAPL observations; (2) waste/fill thickness; (3) thickness of Lake Tonawanda sediments (loamy deposits above the glaciolacustrine silty clay at the site's north end); (4) alluvium thickness; (5) thickness of glaciolacustrine silty clay (Lake Dana sediments); (6) thickness of glacial till; (7) site topography; (8) top of alluvium; (9) top of Lake Dana sediments; (10) top of glacial till; (11) top of Lake Dana-glacial till confining bed; and (12) top of bedrock. If you decide to enter the available geologic data to the database, these maps will be relatively inexpensive to produce. Alternatively, you may decide to wait for OCC/Olin to produce some or all of these maps.

Please call if you have any questions.

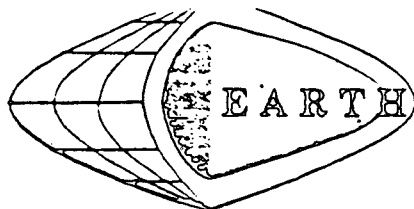
Sincerely,

*Bob*

Robert M. Cohen  
Hydrogeologist

GEOLOGIC AND WELL CONSTRUCTION LOGS  
102ND STREET LANDFILL REMEDIAL INVESTIGATION  
NIAGARA FALLS, NEW YORK

000396



# EARTH DIMENSIONS, INC.

Test Borings and Logs  
East Aurora, New York 14052 •

*Preliminary  
Copy*

MONITORING  
WELL

OW-32-85

PROJECT 102nd Street Landfill well installation LOCATION Along west boundary fence  
1E85a Buffalo Avenue, Niagara Falls, New York

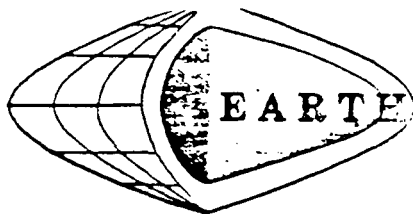
CLIENT GEOTRANS/EPA and DOJ DATE STARTED 10/21/85 COMPLETED 10/21/85

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER							REMARKS	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		0 6	6 12	12 18	18 24	24 30	30 36	N				
	1	3							12"	Extremely moist dark gray silt loam (SANDY-SILT) topsoil fill with fine roots, (OL-ML) 0.2	2" ID black steel pipe Cement-bentonite grout (2)	Soil fill to 2.1 feet over industrial fill to 12.2 feet over original silty topsoil to 13.0 feet over water sorted and deposited mostly very fine sand with some silt to end of boring.
			5					11		Extremely moist mixed pink and gray (SILTY-CLAY) fill, stiff, (CL) 1.7		
				6				12				
	2	9							10"	Extremely moist distinctly mottled brown very fine sand loam (SANDY-SILT) fill, compact, (ML) 1.9		3.0
			7					10		Moist dark brown silt loam (SANDY-SILT) fill, compact, (ML) 2.1		
				3								
					10							
	3	8							2"	Moist mostly black cinders with small < 1/4" fibrous material, broken brick, slag and rounded gravel, loose - grades downward to - - 6.0		5.0
			5					9				
				4								
					3				6"	Extremely moist mostly black cinders with about 10% fibrous material in thin (< 1/8" layers), with small < 1/4" broken brick, slag and glass fragments, very loose and loose - grades downward to - - 9.0	#6 slotted stainless steel screen (super) Special blend sand pack	7.1
			1					4				Noticed a few harder fragments while augering between 0 and 2. foot depth.
				3								
					3				2"			
	5	6										
			4					6				
				2								
10					1				2"	Wet mostly black cinders with about 10% fibrous above 10.0 feet, small glass and wood fragments below 10.0 feet, very loose 12.2		Possible slight chemical odor to sample 5.
	6	1/12"						<1		Wet black silt loam (CLAYEY-SILT) original topsoil, with some moderate size roots (1/16"), soft granular soil structure, (OL-ML) 13.0		Augered to 14. foot depth.
				1								
	7	2							13"	clear transition to - - 13.0	(1)	13.5
			2					5				
				3							(2)	Auger width 14 inches, inside diameter 8 1/2 inches.
					3							
	8	1							10"	Wet faintly mottled gray very fine sandy loam (SANDY-SILT), very loose massive soil structure, (ML) 16.0		(2) Bentonite pellet seal
			1					2				
				1								
					2							
										Boring completed at 16.0 feet.	(1) Mixed bentonite pellet sand pack.	
												Water table at 13.6 feet below surface at completion.

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 000397

LOGGED BY Donald W. Owens/Soil Scientist

curr 1 of 1



# EARTH DIMENSIONS, INC.

Test Borings and Logs  
East Aurora, New York 14052 • (7

*Preliminary  
Copy*

MONITORING  
WELL

OW-21-85

PROJECT 102nd Street Landfill well installation LOCATION Northwest corner of OCC site  
1E85a Buffalo Avenue, Niagara Falls, New York

CLIENT GEOTRANS/EPA and DOJ

DATE STARTED 10/17/85 COMPLETED 10/18/85

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC.	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		0 6	6 12	12 18	18 24	N					
	1	4						9"	Extremely moist black silt loam (CLAYEY-SILT) topsoil fill with fine root fiber, (OL-ML) 0.5	2" ID black steel pipe	Soil fill to 0.5 feet over flyash and industrial fill to 11.0 feet over original topsoil to 11.5 feet over silty lake sediment to 12.0 feet over coarse silty lake sediment to end of boring.
			8				20	Moist reddish brown gravelly silty clay loam (CLAYEY-SILT) fill with 15 to 40% gravel, very stiff, (CL-ML) 2.0			
				12							
					14						
	2	13						5"			
			14				24	Moist gray flyash, coarse silt to very fine sand size, compact 3.5			
				10							
					6						
								8"			
						4	9	Extremely moist mixed gray, brown and black flyash and occasional wood fragment, fine silt to gravel size, loose 6.0			
									Super #6, slotted stainless steel screen Special blend sand pack	Augered only to 12.0 foot depth.  (1) Cement-bentonite grout.  (2) Bentonite pellets.  REC-Recovery  Auger width 14 inches, inside diameter 8 1/2 inches.	
								3"			
							5	Extremely moist black either incinerated garbage or tar like substance with fibrous fragments, loose 8.0			
								6"			
							1/12"	Extremely moist to 10.0 feet, wet below 10.0 feet olive brown fibrous filter cake, very soft 11.0			
								13"			
							1/12"	Wet black silt loam (CLAYEY-SILT) original topsoil, very soft, organic rich with fine root fiber, (OL-ML) 11.5			
									Bentonite pellets	No water measurement at completion late 10/17/85. No water prior to installation well 10/18/85.	
								13"			
									Boring completed at 14.0 feet.	000398	



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WELL ON-33-85

CLIENT GEOTRANS/EPA and DOI

DATE STARTED 10/23/85 COMPLETED 10/23/85

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

DISLOGGED BY Donald W. Owens/Soil Scientist



Preliminary  
Copy

Qv-34-85

DATE STARTED 10/24/85 COMPLETED 10/24/85

DATE STARTED 10/24/85 COMPLETED 10/24/85

000400

Sum 1 of 1A



# EARTH DIMENSIONS, INC.

Test Borings and Logs  
East Aurora, New York 14052 •

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## MONITORING WELL

NO. OW-34-85 continued

PROJECT 102nd Street Landfill well installation LOCATION Adjacent to Niagara River  
1E85a Buffalo Avenue, Niagara Falls, NY

CLIENT GEOTRANS/EPA and DOJ

DATE STARTED 10/24/85 COMPLETED 10/24/85

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		6	12	18	24	30	N			
								Extremely moist dark gray cinders, coarse silt to gravel size, compact, with two (2) slightly decomposed wood chips (1"x 1/2" x 1/8") ----- clear transition to ----- 8.0		Augered to 13.0 feet.
								Extremely moist black cinders, coarse silt to gravel size, loose ----- clear transition to ----- 9.5		
5								Extremely moist grayish pink silty clay loam (CLAYEY-SILT) fill, stiff, (CL-ML) clear transition to ----- 10.5	Refer to sheet 1 of 1	Did not observe securing sample #6 between 10.0 and 12.0 foot depths. Attempted to secure sample at 12.0 foot depth, split spoon rebounded as if hitting rubber. Recommend augering 1.0 foot and resampling.
								Extremely moist black cinders, coarse silt to gravel size, loose ----- assumed ----- 12.5		
								Extremely moist dark gray silty clay loam (CLAYEY-SILT), few very fine brown organic fiber oriented horizontally, stiff, (CL-ML) ----- clear transition to ----- 14.0		
10								Extremely moist dark brown silt loam (CLAYEY-SILT) with high component brown organic fiber oriented hori- zontally, with one very fine sand lens (1/8" thick) in center of horizon, (ML) ----- clear transition to ----- 14.5		
								Wet dark gray (SILT), loose, soil material readily liquifies when dis- turbed (ML) ----- 15.0		
15								Boring completed at 15.0 feet.		Auger width 14 inches, inside diameter 8 1/2 inches.

000401

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

LOGGED BY Donald W. Owens/Soil Scientist

SHEET 1A OF 1A



East Aurora, New York 14052 • (716

Preliminary  
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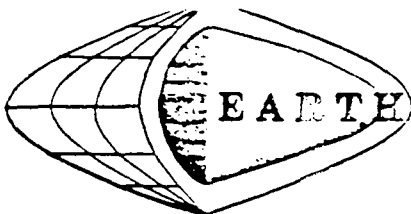
Ow-35-85

PROJECT 102nd Street Landfill well installation LOCATION Near rivers edge western half of  
1E85a Buffalo Avenue, Niagara Falls, NY site  
CLIENT GEOTRANS /EPA and DOI DATE STARTED 10/28/85 COMPLETED 10/29/85

000402

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 LB. WT. FALLING 30 " PER BLOW

ols : 00050 pv Donald W. Owens / Soc. Scientist



# EARTH DIMENSIONS, INC.

Test Borings and Logs  
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## MONITORING

WELL OW-35-85 continued

PROJECT 102nd Street Landfill well installation LOCATION Near rivers edge western half of  
1E85a Buffalo Avenue, Niagara Falls, NY site

CLIENT GEOTRANS/EPA and DOI DATE STARTED 10/28/85 COMPLETED 10/29/85

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER							DESCRIPTION & CLASSIFICATION	WATER TABLE & REMARKS
		0 6	6 12	12 18	18 24	N				
									Moist white resin like industrial waste, massive 10.0	Minimal recovery to sample #6 (2"), resampled between 10.5 and 12.5 foot depth.
									Wet black silt to very fine sand size flyash with wood chips, compact	
									----- grades downward to - 10.5	
5									Wet black fine sand to angular gravel size industrial waste, loose 12.0	
									Wet black muck, mostly decomposed wood fiber, (PT) 12.5	
									Extremely moist black silt loam (CLAYEY-SILT) with fine organic fiber, soft, (OL-ML) 13.0	
									----- clear transition to - 13.0	
10									Extremely moist black silt loam (SANDY-SILT) with fine organic fiber, very loose, (OL-ML) 14.0	
									Boring completed at 14.0 feet.	Auger width 14 inches, inside diameter 8½ inches.
15										

000403

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

LOGGED BY Donald W. Owens/Soil Scientist



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OW-36-85

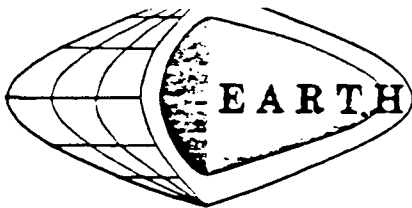
1E85b Buffalo Avenue, Niagara Falls, NY

DATE STARTED 10/29/85 COMPLETED 10/30/85

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

bls LOGGED BY Donald W. Owens/Soil Scientist

000404



# EARTH DIMENSIONS, INC.

Test Borings and Logs  
East Aurora, New York 14052 •

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MONITORING WELL

OW-37-85

PROJECT 102nd Street Landfill well installation LOCATION Near river

1E85a Buffalo Avenue, Niagara Falls, NY

CLIENT GEOTRANS/EPA and DOJ

DATE STARTED 10/31/85 COMPLETED 10/31/85

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		4	6	12	18	24	N				
	1	5							Moist dark gray mixed mostly silt loam (SANDY-SILT) fill, (ML) with 5 to 15% gravel and about 20% flyash, coarse silt to fine sand size, with few fine roots, loose 2.0	(2)	Mostly soil fill to 2.0 feet over industrial fill with wood fragments to 10.0 feet (note comment below) over silty alluvial sediment to 11.0 feet over coarse silty alluvial sediment to end of boring.
			4				10	12"			
				6							
					7						
	2	9									2.0
			3				27	19"	Moist black cinders and flyash, silt to coarse sand size, loose to 3.0 feet, very dense below, with slag fragments, gravel size	(1)	3.2
				24							
					63						
	3	15									
5			38				54	17"	----- grades downward to ----- 5.5		5.0
				16							
					10						
	4	13						18	Wet mostly black and mixed with white mostly silt to coarse gravel size cinders and flyash, compact 7.5		
				15			61				
					46						
					19				Light brown and reddish brown wood-2 distinct different tree limbs with bark 7.8		
	5	10						12"	Moist dark gray cinder and flyash, sand and gravel size 8.0		
				15			16				
10					1				Wet mixed black and reddish brown fine wood fiber and very fine metal flat fragments, dense in place 8.5		10.0
	6	2						20"	Wet black industrial fill, coarse silt to very fine sand (possibly foundary sand), dense in place 8.8		11.5
			3				7				
				4							
					4						
									Wet black mixed cinders, deteriorated concrete, flyash, silt to gravel size dense in place 10.0	(1)	12.5
									Extremely moist black silt loam (CLAYEY-SILT), firm, with numerous fine organic fiber, with fine roots (ML) ----- grades downward to ----- 11.0		
15									Wet mixed black and dark gray silt loam (SANDY-SILT), loose, with fine organic fiber mostly oriented flat and horizontally, with very thin fine sand lenses, (ML) 12.0		

Boring completed at 12.0 feet.

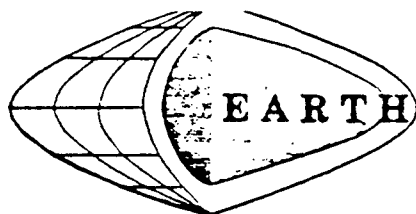
(2) Cement-bentonite grout

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

LOGGED BY Donald W. Owens/Soil Scientist

CURT 1 OF 1

000405



# EARTH DIMENSIONS, INC.

Test Borings and Logs  
East Aurora, New York 14052 • (716)

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## MONITORING

WELL OW-38-85

PROJECT 102nd Street Landfill well installation LOCATION Near center of OCC site, should  
1B85a Buffalo Avenue, Niagara Falls, NY be drainage ditch well

CLIENT GEO TRANS/EPA and DOJ DATE STARTED 11/1/85 COMPLETED 11/6/85

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER							REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		0-6	6-12	12-18	18-24	24-30	30-36	N				
1												Coarse loamy alluvial sedi- ments below 16.0 foot dept to end of bori  Noticed irides- cent green liquid at top of sample #9.  (1) Bentonite pellet seal.
2												
5												
												Wet brown very fine sandy loam (SANDY-SILT), coarse silt and very fine sand, loose, with the coarser (the fine sand) lenses saturated with liquid, no organic matter ex- cept for brown wood fiber in spoon
												Continued on sheet.

000406

Continued on sheet.

trap-fine (1/16") stem-root size 1" long, (ML)

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.



*Preliminary Copy*

WELL OW-38-85

CLIENT GEOTRANS/EPA and DOJ DATE STARTED 11/1/85 COMPLETED 11/6/85

000407

SHEET 2 of 2



## Test Borings and Logs

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WELL OW-39-85

SURF. ELEV. \_\_\_\_\_

LOCATION North central part of site, about  
200 feet east of Love Canal ditch

CLIENT GEOTRANS/EPA and DOJ

DATE STARTED 11/7/85 COMPLETED 11/8/85

000408

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW

DISLOGGED BY Donald W. Owens/Soil Scientist



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East Aurora, New York 14052 • (716) 655-1717

WELL

OW-40-85

SURF. ELEV.

1E85a Buffalo Avenue, Niagara Falls, NY

eastern edge of OXV site, near  
Niagara River.

CLIENT GEOTRANS/EPA and DOJ

DATE STARTED 11/13/85 COMPLETED 11/15/85

000409

Continued on sheet 2

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 LB. WT. FALLING 30 " PER BLOW

bls LOGGED BY Donald W. Owens/Soil Scientist

SHEET 1 2 3



# Preliminary

Copy

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WELL OW-40-25 continued

SURF. ELEV.

PROJECT	<u>102nd Street Landfill well installation</u>	LOCATION	<u>Near monitoring well OW-37-85</u>
LE85a	<u>Buffalo Avenue, Niagara Falls, New York</u>		<u>eastern edge of OXY site, near</u>
CLIENT	<u>GEOTRANS/EPA and DOJ</u>	DATE STARTED	<u>11/13/85</u> COMPLETED <u>11/15/85</u>

000410

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW

ols100009867 Donald W. Owens/Soil Scientist



Summary  
(copy)

East Aurora, New York 14052 • (716) 655-1717

WELL OW-41-85

SURF. ELEV.

1E85d Buffalo Avenue, Niagara Falls, New York

CLIENT GEOTRANS / EPA and DOI

DATE STARTED 11/25/85 COMPLETED

Sampled to refusal 11/26/85

000411

Continued on sheet 2.

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW

Is LOGGED BY Donald W. Owens/Soil Scientist

0-1117

As LOGGED BY Donald W. Owens / Soil Scientist



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SURF. ELEV. \_\_\_\_\_

Sampled to refusal 11/26/85

[illegible]

SHEET 2 OF 3



East Aurora, New York 14052 • (716) 655-1717

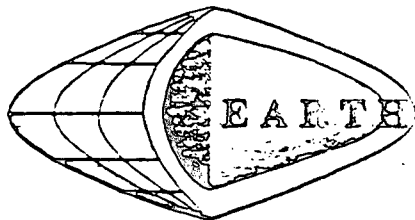
SURF. ELEV.

DATE STARTED 11/15/85 COMPLETED 4/2/86

Sampled to refusal 11/26/85

	RUNLENGTH	RECOVERY	RQD
	39.7-		
1	45.7	100%	49%
	45.7-		
2	49.0	91%	20%
	49.0-		
3	53.3	+100%*	43%
	53.3-		
4	55.3	100%	30%

SHEET 3 OF 3



# EARTH DIMENSIONS, INC.

Test Borings and Logs

East Aurora, New York 14052 • (716) 655-1717

Preliminary

PROPOSED  
MONITORING  
WELL

OW-42-86

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St Landfill well install. LOCATION Approx. 8.0 feet south of ri  
1E85g Buffalo Avenue, Niagara Falls, NY rap bank  
CLIENT GEOTRANS/ERA and DOJ DATE STARTED 3/10/86 COMPLETED 3/11/86

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER					REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		6	12	18	24	N				
								Gravel rip rap		Augered to 3.0 foot depth through gravel rip rap with 14 inch hollow stem augers 8 1/2 inch inside diameter before sampling. Gravel to 3.0 feet over soil fill to 3.5 feet over mostly demolition debris to 6.0 feet over organic muck to 8.0 feet over coarse silty alluvial sediment to 16.5 feet over mostly fine sand with little coarse silt alluvial sediment to 20.0 feet over water sorted and deposited mostly sand and gravel to 26.5 feet over water sorted and deposited fine size sand, little silt to 27.0 feet over water sorted and deposited fine size sand and gravel to 28.0 feet over
								3.0		
	1	6					16"	Extremely moist mixed reddish brown and dark brown silty clay loam (CLAYEY-SILT) with abundant fine and medium size roots (CL)		
			28			71				
				43						
5					38					
	2	31					18"	Moist light grayish green sand and gravel size unknown fill material, possibly decomposed concrete, with occasional gravel size shell fragments		
			103			119				
				16						
					7					
	2	9								
			8							
	3	2					12"	Wet black (MUCK) with abundant fine and medium size roots and wood fibers, strong organic odor, very loose, (OL)		
			2			3				
				1						
10					2					
	4	2					21"	Wet distinctly mottled dark gray silt loam (SANDY-SILT) with very fine to fine size sand, with thin black (MUCK) interbeds <1/16" thick between 8.0 to 9.0 foot depth, with fine size root fibers oriented vertically, very loose, massive soil structure, (ML)		
			1			4				
				3						
					2					
	4	2								
			3				11"	grades downward to		
	5	WR								
			WH			WH				
				WH		WH				
15					WH					
	6	WR					18"	Wet dark gray fine sandy loam (SILTY-SAND) with fine to medium size sand some silt, trace very fine root material, tends to liquify when disturbed, loose, (SM)		
			2			5				
				3						
					3					
	6	4								

No well installed

Backfilled with cement-bentonite grout.

000415

N = NUMBER OF BLOWS TO DRIVE 2 & 3" SPOON 12" WITH 140 lb. WT. FALLING 30" PER BLOW.



# EARTH

DIMENSIONS, INC

## Test Borings and Logs

East Aurora, New York 14052 • (716) 655-1717

Preliminary  
(copy)

BORE  
HOLE NO. OW-43-85

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd Street Landfill well installation LOCATION About 15 feet NNE of Ow-34-85  
 1E85d Buffalo Avenue, Niagara Falls, New York

CLIENT GEOTRANS/EPA and DOJ DATE STARTED 12/3/85 COMPLETED 12/5/85

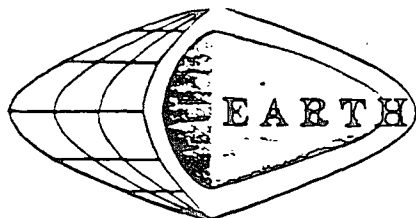
DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER					REC	DESCRIPTION & CLASSIFICATION	WATER TABLE & REMARKS
		1 6	2 12	3 18	4 24	N			
5								No samples taken between 0 and 15.0 foot depths, refer to OW-34-85 for description of fill and alluvial sediments above 15.0 foot depth.	Augered through hard debris from 5.0 to 10.0 foot depth.
									REC - Recovery
									Auger width 7 inches, inside diameter 3 3/4 inches.
10									
15								Extremely moist dark gray silt loam (CLAYEY-SILT), firm, weak thinly laminated, with high component brown organic fiber oriented horizontally, (ML)	
	1	4						----- clear transition to -----	15.5
			3						
				4		7	17"		
					7				
	2	5						See next sheet	

Continued on sheet 2.

000417

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

LOGGED BY Donald W. Owens / Soil Scientist



# EARTH DIMENSIONS, INC.

Test Borings and Logs  
East Aurora, New York 14052 • (716) 655

*Preliminary  
Copy*

BORE

HOLE NO. OW-43-85 continued

PROJECT 102nd Street Landfill well installation LOCATION About 15 feet NNE of OW-34-85  
LE85d Buffalo Avenue, Niagara Falls, New York

CLIENT GEOTRANS/FDA and DOT

DATE STARTED 12/3/85 COMPLETED 12/5/85

DEPTH feet	SAMPLE NO	BLOWS ON SAMPLER					REC	DESCRIPTION & CLASSIFICATION	WATER TABLE & REMARKS
		0 6	6 12	12 18	18 24	24 30			
	2	6					12	Wet dark gray silt loam (SANDY-SILT), loose, thinly bedded, with occasional brown organic fiber oriented horizontally, (ML)	Coarse silty alluvial sediment to 18.0 feet over coarse silt and fine size sand to 22.0 feet, increasing in gravel to 22.5 feet over fine to medium size sand and coarse silt alluvial sediment to 23.0 feet over very fine sand and coarse silt alluvial sediment to 29.0 feet over water sorted and deposited mostly sand and gravel to 30.5 feet over loamy glacial till to 40.5 feet over clayey lake sediment to 41.5 feet over water sorted and deposited sand to 43.0 feet over loamy glacial till to refusal.
			6				12"	-----grades downward to-----	
	3	3					7	Wet dark gray fine sandy loam (SILTY-SAND), mostly medium and fine size, loose, thinly bedded, with occasional thin brown fine organic fiber oriented horizontally, readily liquifies when disturbed, (SM,ML)	
20			3				5	-----clear transition to-----	
				2			10"	Wet gray gravelly sandy loam (SILTY-SAND) with 15 to 30% mostly fine size rounded gravel, loose, weakly stratified, mostly medium to coarse size sand, (SM)	
	4	5					11	-----clear transition to-----	
			6				12"	Wet gray sandy loam (SILTY-SAND), loose, mostly fine to medium size sand, weak thinly bedded, readily liquifies when disturbed, (SM)	
				5			6	-----clear transition to-----	
	5	5					15	Wet gray very fine sandy loam (SANDY-SILT), loose weak thinly bedded, some coarse silt, readily liquifies when disturbed, (ML)	
			7				12"	-----grades downward to-----	
25				8			15	Wet gray gravelly (SAND) with 15 to 40% mostly fine size gravel, medium size sand, loose, weakly stratified, with broken shells, (SP)	
					0		12"	-----clear transition to-----	
	6	3					12	Wet gray sandy loam (SILTY-SAND), loose, mostly fine to medium size sand, weak thinly bedded, readily liquifies when disturbed, (SM)	
			5				24"	-----clear transition to-----	
				7			0	Wet gray very fine sandy loam (SANDY-SILT), loose weak thinly bedded, some coarse silt, readily liquifies when disturbed, (ML)	
	7	5					14	-----grades downward to-----	
			6				10"	Wet gray gravelly (SAND) with 15 to 40% mostly fine size gravel, medium size sand, loose, weakly stratified, with broken shells, (SP)	
				8			6	-----clear transition to-----	
30	8	5					9	Extremely moist pinkish brown gravelly loam (SAND-SILT-CLAY) with 15 to 40% mostly subangular dolomitic gravel, hard, massive soil structure, (ML)	
			5				13"	-----grades downward to-----	
				4			4		
	9	29					35		
			18				17		
				17			13		
	10	6					26		
				11			26		
35				15			26		
					13		13		

000418

Continued on sheet 3.

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.



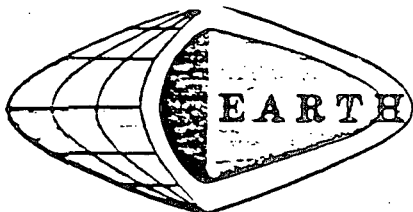
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SURF. ELEV. \_\_\_\_\_

DATE STARTED 12/3/85 COMPLETED 12/5/85

000419

CLINT 3 25 3



# EARTH DIMENSIONS, INC.

Test Borings and Logs

East Aurora, New York 14052 • (716) 655-1717

MONITORING

WELL OW-45-86

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install. LOCATION Between Niagara River and  
1E85g Buffalo Avenue, Niagara Falls, NY OW-34-85

CLIENT GEOTRANS/EPA and DOJ DATE STARTED 2/11/86 COMPLETED \_\_\_\_\_  
Cored 4/2/86

DEPTH	SAMPLE NO.	BLOWS ON SAMPLER						DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		0	6	12	18	24	N			
55	RUN #3							Dolomite, brownish gray, hard, medium grained, thinly bedded, crushed broken dolomite-weathered between 47.4 to 47.9, 50.2 to 50.4, and 50.5 to 50.6 foot depth, with fragments .03 to 0.12', some vertical partings noticed in crushed breakage zones, with stromatolites found on fragments, numerous weathered partings spaced 1 to 3", stromatolites noticed in partings at 48.3 and 48.7 feet, shaly laminations noticed from 49.1 to 49.8, 50.0 to 50.2 and 50.6 to 50.8 foot depths	NX open core hole	Water table at 12.5 feet at completion, 12.7 feet at 8:30 am 4/2/86, the morning following coring.
60	RUN #4							- - -grades downward to- 52.4		Water loss into bedrock while coring.
65								Dolomite, medium brownish gray hard, medium grained, thinly bedded, breakage zone noticed from 52.4 to 53.3 and 54.1 to 54.5 foot depths, horizontal partings every 2 to 3", slightly pitted from 51.3 to 53.8 with secondary calcite in pits		
								- - clear transition to- 57.4		
								See next sheet.		
70										

RUN#	GALLONS
1	171
2	454
3	536
4	246
TOTAL	1407

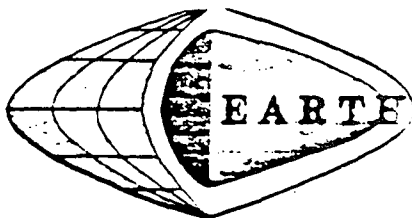
Water table at 12.5 feet below surface at completion of coring.

000420

N = NUMBER OF BLOWS TO DRIVE \_\_\_\_\_ " SPOON \_\_\_\_\_ " WITH \_\_\_\_\_ lb. WT. FALLING \_\_\_\_\_ " PER BLOW.

logged by Dale M. Gramza/Geologist

3 3A



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Test Borings and Logs  
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## MONITORING

WELL OW-45-86

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install. LOCATION Between Niagara River and  
1E85g Buffalo Avenue, Niagara Falls, NY OW-34-85

CLIENT GEOTRANS/EPA and DOJ DATE STARTED 2/11/85 COMPLETED \_\_\_\_\_

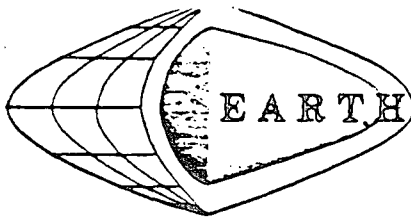
Cored 4/2/86

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						DESCRIPTION & CLASSIFICATION	WATER TABLE & REMARKS
		0 6	6 12	12 18	18 24	N			
55								Dolomite, gray, some grayish brown, hard, medium grained, very thinly bedded, noticed breakage zone from 57.4 to 57.7 foot depth with some secondary calcite and stromatolites noticed on fragments, carbonaceous shale partings spaced 1/2 to 3" with little to some calcite present, slightly pitted, noticed curved bedding from 57.4 to 57.9 foot depth	
								- -grades downward to - -59.5	
60								Dolomite, brownish gray, moderately hard, medium to coarse grained, thinly bedded, vertical and horizontal joints noticed between 59.5 to 60.5 foot depth, with abundant calcite deposits along joints, pitted to vuggy, becoming vuggy below 60.6 foot depth, with calcite in vugs and pits 60.9	
								Coring completed at 60.9 feet.	
65									
70									

000421

N = NUMBER OF BLOWS TO DRIVE - - " SPOON - - " WITH - - lb. WT. FALLING - - " PER BLOW.

LOGGED BY Dale M. Gratta/Geologist



# EARTH DIMENSIONS, INC.

Test Borings and Logs

East Aurora, New York 14052 • (716) 655-1717

MONITORING

WELL OW-46-85

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd Street Landfill well installation LOCATION Near OW-31-85

185d Buffalo Avenue, Niagara Falls, New York

CLIENT GEOTRANS/EPA and DOJ

DATE STARTED 12/7/85 COMPLETED \_\_\_\_\_

Sampled to refusal 12/10/85. Set casing 12/10 to 12/11.

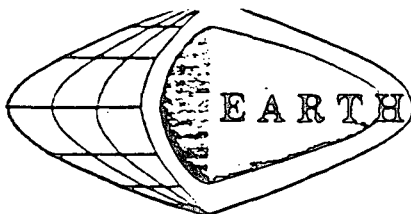
DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		0 6	6 12	12 18	18 24	24 30	N				
									Augered to 13.0 feet without sampling, refer to OW-31-85 for description of fill and lacustrine sediment above 13.0 foot depth.		Coarse silty lake sediment to 15.0 feet over very fine sand with some coarse silt to 20.0 feet over clayey lake sediment to 26.5 feet over loamy reworked or water laid glacial till to 28.0 feet over loamy glacial till to 34.0 feet over clayey still water deposit to 34.5 feet over loamy glacial till to 36.5 feet over water sorted and deposited mostly fine size sand, little silt to 37.1 feet over fractured dolomite to 37.9 feet over Lockport Dolomite.
5											
10											
									Extremely moist distinctly mottled olive gray silt loam (SANDY-SILT), very loose, weak thinly bedded with very thin 1/16" very fine sand lenses (ML)		REC-Recovery  Auger width 12 inches, inside diameter 6 1/2 inches.
15											
	1	WR							Extremely moist distinctly mottled gray very fine sandy loam (SANDY-SILT), loose, weak thinly bedded with thin coarse silt lenses, (ML,SM)		Continued on sheet 2.
			WR					15"			
				WR							
	2	15							Extremely moist distinctly mottled gray very fine sandy loam (SANDY-SILT), loose, weak thinly bedded with thin coarse silt lenses, (ML,SM)		Continued on sheet 2.
			3					6			
				3							
	3	WR									

000422

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

bls LOGGED BY Donald W. Owens/Soil Scientist

DATE 1 -- 3



# EARTH DIMENSIONS, INC.

Test Borings and Logs

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*Summary*  
*Copy*

MONITORING

WELL OW-46-85 continued

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd Street Landfill well installation LOCATION Near OW-31-85

1E85d Buffalo Avenue, Niagara Falls, New York

CLIENT GEOTRANS/EPA and DOT

DATE STARTED 12/7/85 COMPLETED \_\_\_\_\_  
Sampled to refusal 12/10/85. Set casing 12/10/85.  
to 12/21/85.

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER							REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		0	6	12	18	24	N					
20	3		3				6	22"	Extremely moist distinctly mottled gray, very fine sandy loam (SANDY-SILT, loose, weak thinly bedded with thin coarse silt lenses, (ML,SM)	19.7		No chemical odor to black zone between 19.7 and 20.0 foot depth.
				3								
					4							
	4	3										
			2						9"	Wet black very fine sandy loam (SANDY-SILT), very loose, weak thinly bedded, (ML,SM)	20.0	
				2			4					
					3							
	5	WR										
									16"	Extremely moist grayish pink (SILTY-CLAY), very soft, weak thinly laminated with very thin coarse silt lenses, (CL)		
					1							
	6	WR										
									17"	Noticed orangish red interlayer 3 inches thick 24.0 - 24.3 foot depth, and interlayered <1 inch thick below 25.0 feet		
					1							
	7	WR										
									18"	Wet reddish brown gravelly clay loam (SAND-SILT-CLAY) with 15 to 40% mostly subangular dolomitic gravel, very soft, weak thinly laminated, with little fine to medium size sand, (ML-CL)	26.5	
	8	WR										
									13"	Moist reddish brown gravelly clay loam (SAND-SILT-CLAY) with 15 to 40% mostly subangular dolomitic gravel and occasional cobble, hard with brittle consistence, massive soil structure, (ML-CL)	28.0	
	9	23										
30			24						12"	Moist reddish brown gravelly clay loam (SAND-SILT-CLAY) with 15 to 40% mostly subangular dolomitic gravel and occasional cobble, hard with brittle consistence, massive soil structure, (ML-CL)	32.0	
	10	27										
									18"	Moist reddish brown gravelly loam (SAND-SILT-CLAY) with 15 to 40% mostly subangular, dolomitic gravel and occasional cobble, hard with brittle consistence, massive soil structure, (ML-CL)	34.0	
	11	20										
35									22"			Continued on sheet 3.

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

LOGGED BY Donald W. Owens / Soil Scientist

000423



## Test Borings and Logs

## MONITORING

WELL OW-46-85

SURE

PROJECT 102nd Street Landfill well installation LOCATION Near OW-31-85  
1E85d Buffalo Avenue, Niagara Falls, New York

CLIENT GEOTRANS/EPA and DOJ DATE STARTED 12/7/85 COMPLETED 12/11/85  
Sampled to refusal 12/10/85. Set casing 12/10 to 12/11/85.

000424

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 LB. WT. FALLING 30 " PER BLOW.

As LOGGED BY Donald W. Owens/Soil Scientist

SHEET 3 OF 3

DIMENSIONS, INC.

## Test Borings and Logs

East Aurora, New York 14052 • (716) 655-1717.

## MONITORING

WELL OW-46-25 continued

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install. LOCATION Near OW-31-85  
1E85d Buffalo Avenue, Niagara Falls, New York

CLIENT GEOTRANS/EPA and DOJ DATE STARTED 12/7/85 COMPLETED \_\_\_\_\_  
Sampled to refusal 12/10/85. Set casing 12/10 to 12/11/85

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		6	6	12	18	24	N				
	12	15						9"	Extremely moist alternating gray and grayish pink (SILTY-CLAY), very stiff, thinly laminated with very thin coarse silt lenses, (CL)		Part of split spoon sample #13 consisted of plug from inside the hollow stem auger.
			26								
				100	3"						
								5"			
	13	100	4"						Extremely moist brown gravelly loam (SAND-SILT-CLAY) with 15 to 40% mostly subangular dolomitic gravel and occasional cobble, hard with brittle consistence, (ML)		Sample #14 obtained from 37.6 to 37.9 foot depth.
	14	100	4"					<1"	- - grades downward to -36.5		Augered to 38.6 feet. Bottom of casing 38.6 foot depth.
	RUN #1								Wet brownish gray fine sandy loam (SILTY-SAND), compact in place, weak thinly bedded, (SM)		Water table 15 minutes after completion 11.7 feet below surface.
40									- - clear transition to -37.1		
									Wet gray angular mostly dolomitic gravel, loose in spoon.		
									- - grades downward to -37.9		
									Grout and gravel		
									Dolomite, gray, hard, medium grained, thinly bedded, noticed vertical parting at 38.3 foot depth filled with selenite, slightly calcareous shaly laminations, spaced 1/2 to 4 inches		
45									- - grades downward to -39.4		
									Dolomite, medium brownish gray hard, fine grained, thin to very thinly bedded, shale partings spaced 1-5 inches, slightly pitted from 39.4 to 39.7 foot depths		
	X								- - grades downward to -41.4		
50									Dolomite, medium gray, hard, fine grained, thinly bedded, shale laminations spaced 1/2-3 inches, noticed thin selenite seams below 41.7 foot depth		
	R								- - grades downward to -42.2		
	U										
	N										
	#										
	3										
	I										

NX open core hole

S	LENGTH	RECOVERY	RQD
1	38.0-40.2	92%	33%
2	39.2-40.2	100%	63%
3	49.2-53.2	94%	24%

Water loss  
Run#1 - 0  
Run#2-407 gallons  
Run#3- 49 gallons

Continued on sheet 4.

000425

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

bs LOGGED BY Donald W. Owens/Soil Scientist



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OW-46-85 continued

SURF. ELEV.

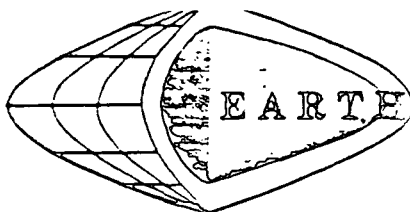
1E85d ~~Buffale Avenue, Niagara Falls, NY~~

CLIENT GEOTRANS/EPA and DOJ DATE STARTED 12/7/85 COMPLETED

Sampled to refusal 12/10/85. Set casing 12/10 to 12/11/85

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

000428



# EARTH DIMENSIONS, INC.

Test Borings and Logs  
East Aurora, New York 14052 • (716) 655-1717

MONITORING  
WELL

OW-47-85

SUR

PROJECT 102nd Street Landfill well installation LOCATION Adjacent to OW-36-85  
1E856 Buffalo Avenue, Niagara Falls, New York

CLIENT GEOTRANS/EPA and DOJ DATE STARTED 12/12/85 COMPLETED 12/14/85

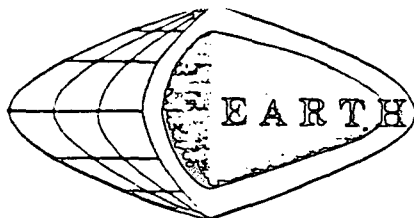
DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		0-6	6-12	12-18	18-24	N					
									Auger debris consisted of mostly extremely moist dark gray to black flyash, coarse silt to fine size sand		Industrial waste fill to 10.5 feet over silty alluvial to 11. feet over coarse alluvial to 17.0 feet over water sorted and deposited mostly fine size sand with some coarse silt to 26.0 feet over water sorted and deposited mostly medium and fine size sand to 30. feet over water sorted and deposited sand and gravel to 33.0 feet over clayey lake sediment to end of boring.
	1	4							Extremely moist mostly dark gray cinders, silt to gravel size with one red broken brick fragment and wood chips, loose		
5		6					9	10"	--- clear transition to --- 6.0		
	2	9							Wet mostly dark gray with white below 7.0 feet mostly cinders and slag, silt to gravel size, mixed with brine sludge below 8.0 feet, compact		
		8					14	10"	--- clear transition to --- 8.0		
	3	4							Wet mostly dark gray cinder, sand and gravel size with unknown fibrous material, very loose		
10		1					2	3"	--- grades downward to --- 10.5		
	4	2							Extremely moist dark brown to black silt loam (CLAYEY-SILT), soft, with fine brown decomposed organic fiber oriented horizontally, and very fine roots, (ML-CL) grades downward to --- 11.0		
		5					7	12"	Extremely moist dark brown silt loam (SANDY-SILT), loose, with some vertical roots and fine organic fiber mostly oriented flat and horizontally, with very thin fine sand lense, (ML) increasing in fine sand content below 14.0 foot depth		
	5	2					6		--- grades downward to --- 12.0		
		4					8	12"			
15	6	4									
		3					7	11"			
		4									
	7	4									
		4									
							11	14"			

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 PER BLOW.

Is LOGGED BY Donald W. Owens/Soil Scientist

SHEET 1 OF 2

000427



# EARTH DIMENSIONS, INC. *Preliminary*

Test Borings and Logs

East Aurora, New York 14052 • (716) 655-1717

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## MONITORING

WELL OW-47-85

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd Street Landfill well installation LOCATION Adjacent to OW-36-85

1E85d Buffalo Avenue, Niagara Falls, New York

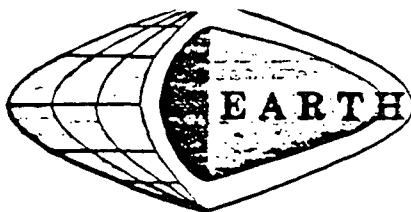
CLIENT GEOTRANS/EPA and DOJ

DATE STARTED 12/12/85 COMPLETED 12/14/85

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		11 6	6 12	12 18	18 24	24 30	N				
	7						7		Extremely moist dark brown silt loam (SANDY-SILT), loose with some vertical roots and fine organic fiber mostly oriented flat and horizontally, with very thin fine sand lenses, (ML) increasing in fine sand content below 14.0 foot depth ----- grades downward to -----	Two inch inside diameter black steel pipe	Used 9 gallo of water to install well  Strong chemical odor to sample 15, noted mostly brown oily liquid to sample. Hard to assess if liquid had penetrated clays.
	8	WR									
			2				3				
				2				10"			
20					3						
	9	2									
			3					11"			
				4			7				
						13					
	10	WR									
			2				6	8"	Wet dark gray fine sandy loam (SILTY-SAND), loose, weak thinly bedded, (SM)  ----- grades downward to -----	Two inch inside diameter black steel pipe	
				4							
					7						
	11	5									
25			10				20	11"			
				10							
					8						
	12	6									
			6				16	8"			
				10							
					11						
	13	WR							Wet gray loamy sand (SAND), loose and compact, mostly medium to fine size sand, (SP)  ----- grades downward to -----	Two inch inside diameter black steel pipe	28.0
			3				8	10"			
				5							
30					6						
	14	6									
			9				23	8"			
				14							
					31						
	15	20									
			19				30				
				11					Wet reddish brown (SILTY-CLAY), stiff, weak thinly laminated Boring completed at 34.0 feet.	Super #6 slotted stain less steel screen  Six inch sand blend	33.0
					7						
35											

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30

000428  
PER BLOW



# EARTH DIMENSIONS, INC.

Test Borings and Logs  
East Aurora, New York 14052 • (716) 655-1717

Preliminary  
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BORE  
HOLE NO. 47E

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install. LOCATION Approx. 45.0 feet west of  
1E85g Buffalo Avenue, Niagara Falls, NY existing MW-47  
CLIENT GEOTRANS/EPA and DOJ DATE STARTED 4/29/86 COMPLETED 4/30/86

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WATER TABLE & REMARKS
		6	6	12	18	24	N			
	1	6							Extremely moist dark brown silt loam (SANDY-SILT) topsoil with few fine roots (CL-ML) 0.5	Topsoil to 0.5 feet over silty soil fill to 0.8 feet over sand fill with some gravel to 1.3 feet over mixed fine silt and coarse silt fill to 1.8 feet over very fine sandy fill to 2.1 feet over mostly flyash to 5.0 feet over assumed industrial fill to 10.5 feet over fine silty alluvial sediment to 12.0 feet over coarse silty alluvial sediment to 16.0 feet over water sorted and deposited mostly very fine size sand to 25. feet over water sorted and deposited fine and medium size sand with some gravel to 31.0 feet over water sorted and deposited sand and gravel to 33.5 feet over clayey lake sediments to end of boring
		7						15	18"	
			8							
					14					
	1	5							Moist black silt loam (SANDY-SILT) fill with 5 to 15% white material (ML) 0.8	
			15							
	2	6						9	11"	
			6						Moist dark brown gravelly sandy loam (SILTY-SAND) fill with 15 to 40% mostly sub-angular gravel, compact, loose when disturbed, (GM) 1.3	
					3					
5						3				
	3	WP								
			1					<1	0	
				12						
					1					
	3	1							Moist mixed reddish brown silty clay loam (CLAYEY-SILT) and brown silty loam (SANDY-SILT) fill, very stiff and compact, (CL-ML) 1.9	
			1							
	4	WR							Extremely moist dark gray very fine sandy loam (SILTY-SAND) fill, compact, (SM-ML) 2.1	
			WR					0		
			WR						- - clear transition to -	
10					WR				Extremely moist dark gray flyash, coarse silt to gravel size, with inter mixed white material between 2.5 and 3.1 foot depth 3.5	
	5	3								
			3					8	26"	
					5					
						7				
	5	10							Moist mixed dark gray and black flyash, coarse silt to very fine sand size, loose - - - - - assumed - - - - - 5.0	
			12							
	6	2							Wet white and gray industrial fill, coarse silt size, with unknown fibrous material at 10.5 feet, very loose 10.5	
			2					5	13"	
					5					
15										
	7	4							Extremely moist black silt loam (CLAYEY-SILT), firm, very fine brown organic fiber with fine to medium size weathered roots, (OL-ML) 12.0	
			6							
					5			11		
						5				
	7	7								

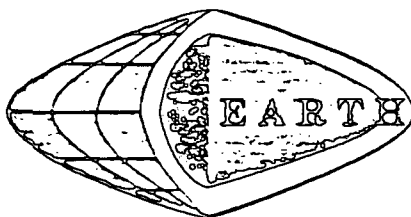
Continued on sheet 2.

000429

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 LB. WT. FALLING 30 " PER BLOW.

bsLOGGED BY Dale M. Gramza/Geologist

sheet 1 of 2



# EARTH DIMENSIONS, INC.

Test Borings and Logs

East Aurora, New York 14052 • (716) 655-1717

*Preliminary*  
*Copy*

BORE  
HOLE NO. 47E

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install. LOCATION Approx. 45.0 feet west of  
1E85h Buffalo Avenue, Niagara Falls, NY existing MW-47  
CLIENT GEOTRANS/EPA and DOJ DATE STARTED 4/29/86 COMPLETED 4/30/86

DEPTH	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WATER TABLE & REMARKS
		0	6	12	18	24	N			
5.0	1		8						Extremely moist dark brown silt loam (SANDY-SILT), compact, with some very fine vertical roots and fine size organic fiber oriented horizontally, noticed thin fine sand lenses, (ML) - - -grades downward to 13.0 Extremely moist distinctly mottled grayish brown silt loam (SANDY-SILT), loose, with some fine size organic fiber oriented horizontally with occasional fine size vertical root, with thin fine sand lenses, increasing in sand content below 14.0 feet, (ML) - - - grades downward to 16.0 Extremely moist gray very fine sandy loam (SILTY-SAND), compact with some fine size organic fiber oriented vertically, with thin coarse silt lenses, (SM tending towards ML) - - -grades downward to 17.5 Wet gray fine sandy loam (SILTY-SAND), very loose, becoming loose below 20.0 foot depth, noticed one (1) small shell fragment at 23.5 feet, weak thinly bedded, (ML) -grades downward to 25.0  See next sheet.	Samples 1,3,5,7,9, 11 and 13 obtained with 3" OD-3' sample spoon Samples 2,4,6,8,10,12 and 14 obtained with 2" OD-2' sample spoon  Slight chemical odor to sample 13, trace napl at the base. Noticed dark brown liquid napl with iridescent sheen in sample 14.
	2									
	3									
	4		2					4		
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000430

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 LB. WT. FALLING 30 " PER BLOW.

LOGGED BY Dale M. Granza/Geologist

SHEET 2 OF 2





East Aurora, New York 14052 • (716) 655-1717

SURF. ELEV. \_\_\_\_\_

PROJECT	102nd St. Landfill well install.	LOCATION	Approx. 35.0 ft. east of
1E85g	Buffalo Avenue, Niagara Falls, NY		existing OW-47
CLIENT	GEOTRANS/EPA and DOJ	DATE STARTED	5/1/86
		COMPLETED	5/1/86

000432

RECORDED BY Date M. Gammie / Geologist



# EARTH DIMENSIONS, INC.

Test Borings and Logs

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*Preliminary*  
*Copy*

MONITORING

WELL OW-48-86

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install. LOCATION Northeast corner of Griffin  
1E85g Buffalo Avenue, Niagara Falls, NY Park

CLIENT GEOTRANS/EPA and DOJ DATE STARTED 2/12/86 COMPLETED 2/12/86

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		0 6	6 12	12 18	18 24	24 30	N				
1	13							10"	Moist faintly mottled brown silty clay loam (CLAYEY-SILT) with some fine root fibers, stiff, (CL-ML) 0.5	(1) 0.5	Topsoil to 0.5 feet over flyash and cinder industrial fill
2	11		4				8	14"	Moist light gray and white flyash and black cinders, noticed several green glass fragments mixed in flyash with 1 piece gravel size sewage material at 0.6 feet, loose when disturbed, fill 2.0	(3) 2.0	2.0 feet over mixed soil fill with flyash and cinder fragment to 4.2 feet over flyash and cinder industrial waste
3	5							9"	Extremely moist faintly mottled mixed gray silt loam (SANDY-SILT) and brown silt loam (SANDY-SILT), compact, mostly soil fill, noticed trace white flyash at 2.5 to 2.8 foot depth 3.5	2" 10 black pipe	8.5 feet over coarse silty Lake Tonawanda sediment to 9.5 feet over fine silty Lake Tonawanda sediment to end of boring.
4	1							1"	Extremely moist to wet faintly mottled gray silt loam (SANDY-SILT) fill with crushed black cinders from 3.5-3.7 feet with several large clear glass fragments at base of sample bottom 0.1 feet, wet 4.2	Super #6 slotted stainless steel screen sand pack	9.5
5			1				2	11"	Wet mixed black and dark gray silt to sand size flyash and cinder industrial fill, one medium size gravel piece at 4.4 feet, small clear and brown glass fragments between 4.5-5.5 foot depth, very loose 6.5	Special blend sand pack	10.0
6									Wet black silt to sand size flyash, industrial fill with one red clay tile fragment, noticed slight iridescent sheen in liquid on this sample, very loose, tends to liquify when disturbed 8.5	WH-Sampler penetration with weight of rods and hammer	
7											(1) Protective cover.
8											(2) Bentonite pellet seal.
9											(3) Cement-bentonite grout.
10											Water table at 7.0 feet below surface one hour after completion.
11											
12											
13											
14											
15											

000433

Continued on sheet 1A.

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

LOGGED BY Dale M. Grange/Geologist

DIMENSIONS, INC.

## Test Borings and Logs

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E. Preliminary Copy

MONITORING

WELL: OW-48-86 continued

SURF. ELEV. \_\_\_\_\_

PROJECT	102nd St. Landfill well install.	LOCATION	Northeast corner of Griffin
LE85c	Buffalo Avenue, Niagara Falls, NY		Park

CLIENT GEOTRANS/EPA and DOJ DATE STARTED 2/12/86 COMPLETED 2/12/86

[illegible]

000434

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 LB. WT. FALLING 30 " PER BLOW.

bsLOGGED BY Dale M. Gramza/Geologist



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WELL OW-49-86

SURF. ELEV.

PROJECT 102nd St. Landfill well install. LOCATION Near 102nd St. Landfill fence  
1E85g Buffalo Avenue, Niagara Falls, NY

CLIENT GEOTRANS/FBI and DOJ DATE STARTED 2/17/86 COMPLETED 2/18/86

DEPTH Feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		0-6	6-12	12-18	18-24	N					
	1	22						Frozen to 0.5 feet, moist below, dark gray silt loam (CLAYEY-SILT) topsoil with 5 to 15% dolomitic gravel and occasional cobble, few fine roots, one red broken brick fragment	(1)	0.5	Soil fill to 1.5 feet over mostly incinerated garbage to 8.5 feet over mucky material to 9.5 feet over mostly coarse silt alluvial sediment to end of sampling.
			17			30	24"				
				13							
					2						
	1	8									
			16							2.6	
	2	6						Extremely moist mixed and in layers about 2-4 inches thick dark brown, reddish brown and black cinder, silt to gravel size	2" ID black steel pipe	3.7	
			4			6	14"				
				2						4.5	
5						2					
	2	2									
			5								
	3	2									
			2								
				1		3	17"				(1) Bentonite pellets.
					2						
	3	2									Noticed iridescent sheen to liquid to mucky zone in upper part of sample #4.
			1								
	4	2						- - -clear transition to-		9.5	
10			2			4	23"	Wet black mostly cinders, fine sand to gravel size, with broken glass, wood fragments coarse to fibrous oriented in all directions, very loose, petroleum odor, iridescent sheen	Super #6 slotted stainless steel screen blend sand pack		
	4	5									
			6							12.0	
								Wet dark gray mucky silt loam (CLAYEY-SILT) with a high component of nearly vertical brown roots and organic fibrous material, very loose			
15								Extremely moist dark gray silt loam (SANDY-SILT) with nearly vertical brown fine size roots, fine black root channels, noticed little partially decomposed flat brown fibers oriented horizontally, weak thinly bedded	Water table at 6.0 feet below surface at completion. Asphalt smell to liquid.		

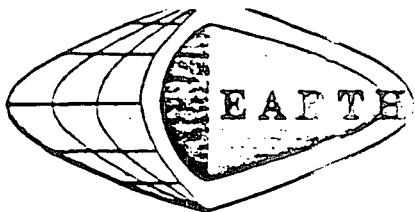
000435

Boring completed at 12.0 feet.

N = NUMBER OF BLOWS TO DRIVE 3 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW

RECORDED BY Donald W. Owens/Soil Scientist

SHEET 1 OF 2



# EARTH DIMENSIONS, INC.

Test Borings and Logs

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## MONITORING

WELL OW-50-86

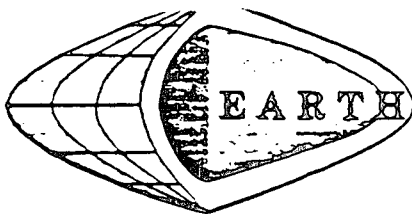
SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install. LOCATION East central part of Griffin  
1E85g Buffalo Avenue, Niagara Falls, NY Park, near fence to 102nd St  
CLIENT GEOTRANS/EPA and DOJ DATE STARTED 2/18/86 COMPLETED 2/20/86  
Landfill, just south of OW-49

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER					REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		6	12	18	24	N				
									(1)	0.5
								Refer to monitoring well log OW-49-86 for stragraphy des- cription of materials above 12.0 foot depth		Samples 1 and 3 with 3' long, 3" split spoon, samples 2 and with 2' long 2" split spoon.
5										Sampled into coarse silt - very fine and fine size sand alluvial sediments to 21.0 feet over water sorted and deposited sand and gravel, trace silt to assumed 21.5 feet over loamy glacial till to end of boring.
10								Wet faintly mottled olive gray very fine sandy loam (SILTY-SAND), compact weak thinly bedded, few brown nearly vertical roots, mot- tling oriented mostly along root channels, one (1) fine size rounded gravel, (SM tending towards ML)		
	1	5						-grades downward to-14.0		
		5					11	29"		Augered with- out sampling with 14 inch, 8 1/2 inch inside dia- meter augers to 10.0 feet, Feb. 18, to 12.0 foot
			6					Wet dark gray very fine sandy loam (SILTY-SAND). compact, weak thinly bedded, very few very fine nearly vertical brown roots to 15.5 feet, (SM tending towards ML)		
			6					15.5		
15	2	1								
			3				5	12"		
			2							
				3						
	3	2							(2)	Continued on sheet 2.

000436

N = NUMBER OF BLOWS TO DRIVE 362 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.



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Test Borings and Logs  
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MONITORING

WELL OW-50-86 continued

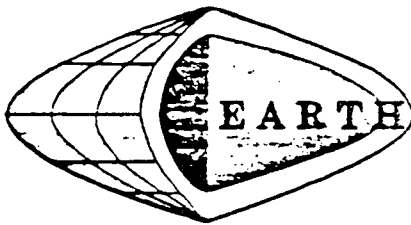
SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install. LOCATION East central part of Griffin  
1E85g Buffalo Avenue, Niagara Falls, NY Park, near fence to 102nd St.  
CLIENT GEOTRANS/EPA and DOJ DATE STARTED 2/18/86 COMPLETED 2/20/86  
Landfill, just south of OW-49-86.

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		6	6	12	18	24	N				
	1		3				6	32"	Wet dark gray very fine sandy loam (SILTY-SAND), compact, weak thinly bedded, very few very fine nearly vertical brown roots to 15.5 feet, noticed occasional fine size white broken shell fragments and black decayed organic root at about 18.5 foot depth	Super #6 slotted stainless steel screen special coarse blend sand pack	depth before sampling on Feb. 20, 198
	2			3							
	3	6									Resampled in same sampling hole 20.0-
20	4		6								22.5 foot
	5			2			8				21.5 depth with 3
	6				6						long-3" OD spoon with
	7						66		- - -grades downward to- 21.0	22.5	WR-WR-WR-12-18 blow counts.
	8								Wet gray very gravelly loamy sand (SAND) with 40 to 60% mostly rounded fine to coarse size gravel, fine to coarse size sand, trace silt, loose, stratified, very thin coarse silt lenses		
25									- - -Assumed- - - - - 21.5		Noted only few small pinkish brown loamy sediments in two gravel size areas near base of 3" spoon.
									Assumed extremely moist pinkish brown gravelly loam (SANDY-SILT) with 15 to 40% mostly subangular dolomitic gravel, very dense, massive soil structure, (ML)	22.5	Water table at 14.5 feet below surface at completion of sampling
											6.2 feet after placing bentonite pellets.
									Boring completed at 22.5 feet		Augered to 22.0 foot depth.
30									Weight of end of tape broke after 15.5 feet, stainless steel rod.	REC-recovery	
										WR-Sampler penetration with weight of rods only.	
										(1) Water box protective casing.	
										(2) Super #6 slotted stainless steel screen.	
35											

000437

N = NUMBER OF BLOWS TO DRIVE 3 6 2 " SPOON 12 " WITH 140 LB. WT. FALLING 30 " PER BLOW.



# EARTH DIMENSIONS, INC.

Test Borings and Logs

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MONITORING

WELL OW-51-86

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install. LOCATION Waste well in southeast corner of Griffin Park  
1E85g Buffalo Avenue, Niagara Falls, NY

CLIENT GEOTRANS/EPA and DOJ DATE STARTED 2/20/86 COMPLETED 2/20/86

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS	
		0 6	6 12	12 18	18 24	N						
	1	0						7"	Extremely moist dark gray silt loam (SANDY-SILT) topsoil with high component of brown fibrous roots, compact, (OL-ML)	(1)	0.5	Soil fill to 1.0 feet over mixed mostly household garbage to 5.0 feet over soil fill to 6.0 feet over mostly house hold garbage to 9.0 feet over coarse silty alluvial sediments to end of boring.
			7									
				6			13					
					5							
	2	2							Extremely moist brown (SILTY-CLAY) fill, stiff, with nearly vertical fine size roots, (CL)	0.5 black pipe cement-bentonite grout		
			3				5	1"			2.7	
				2								
					1						3.7	
	3	WR							Extremely moist mixed and in layers brown, rusty brown, and dark gray mostly cinders, fine sand to fine gravel size, compact - grades downward to -	2" ID black pipe cement-bentonite grout	4.5	
5		WR										
				2			K3	5"				
					2							
	4	2							Wet black cinders, coarse sand to gravel size, - grades downward to -			
			4									
				2			6	3"				
					4				Wet mixed black and brown fibrous debris included paper, small fragments of tin foil, poor recovery - grades downward to -			
	5	1										Sample 2 recovery appears to be plug.
			2				3	12"				
				1								
10					3				Wet mixed gray and black silt loam (CLAYEY-SILT) soil fill, soft	Super #6 slotted stain-less steel screen special coarse blend sand pack	6.5	
											10.0	
									Wet black paper, thin layered with broken glass, wood fragments, silt size waste (unknown), loose			Encountered wire cable after augering between 4.0 and 6.0 foot depth relocated hole a few feet to the north.
									Extremely moist dark brown silt loam (SANDY-SILT), very loose, with fine partially deteriorated organic flat fiber oriented horizontally and fine size nearly vertical roots (OL-ML)			Resampled 2-4 feet with blow counts of 2-1-1-2
15												Water table at 8.5 feet below surface at completion.
												No chemical odor.
												(1) Water box protective casing
												(2) Bentonite pellet seal.

Boring completed at 10.0 feet.

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

000438



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N.C. Copy

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SURF. ELEV.

PROJECT	102nd St. Landfill well install.	LOCATION	Adjacent to OW-51-86, south-
1E85c	<u>Buffalo Avenue, Niagara Falls, NY</u>		<u>east corner of Griffin Park</u>

CLIENT GEOTRANS/EPA and DOJ DATE STARTED 2/20/86 COMPLETED 2/21/86

[illegible]

RECORDED BY Donald W. Owens / Soil Scientist

QUEST 1 2 3

# EARTH

**DIMENSIONS, INC.**

## Test Borings and Logs

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INC. Copy

## MONITORING

WELL OW-52-86 continued

SURF. ELEV.

PROJECT 102nd St. Landfill well install. LOCATION Adjacent to OW-51-86, southeast  
 1005c Buffalo Avenue, Niagara Falls, NY corner of Griffin Park

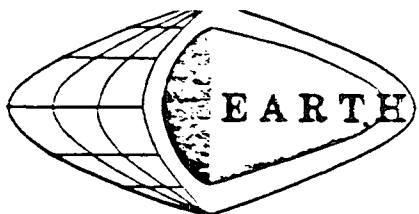
CLIENT GEOTRANS/EPA and DOJ DATE STARTED 2/20/86 COMPLETED 2/21/86

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N = NUMBER OF BLOWS TO DRIVE 2 & 3 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW

bsLOGGED BY Donald W. Owens/Soil Scientist

SHEET 2 OF 2



# EARTH DIMENSIONS, INC.

Test Borings and Logs  
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*Summary*  
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MONITORING

WELL OW-53-86

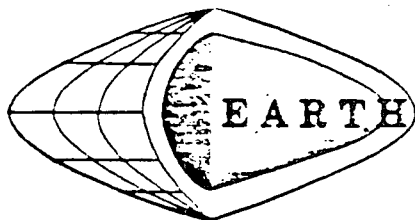
SURF. LEV. \_\_\_\_\_

PROJECT 102nd Street Landfill well installation LOCATION Near junction of Little Niagara  
1E85e Buffalo Avenue, Niagara Falls, New York and East Branch of Niagara River

CLIENT GEOTRANS/EPA and DOJ DATE STARTED 1/28/86 COMPLETED \_\_\_\_\_  
Sampled to refusal and installed casing 1/31/86

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		6"	12"	18"	24"	30"	N				
	1	9							Frozen dark gray silt loam (SANDY-SILT) topsoil, few fine brown roots, (ML) 0.5		Soil fill to 0.5 feet over mostly industrial flyash and cinders to 8. feet over coarse silt and very fine sand alluvial sediment to 18.0 feet over water sorted and deposited mostly sand with some gravel to 21.0 feet over loamy glacial till to 41.3 feet over Lockport Dolomite
			30								
				20			50	13"	Moist mixed orange and dark gray mostly flyash and cinders, coarse silt to medium sand size with slag gravel and cobble size, very dense in place 3.0		
					10						
	1	8									
			8								
	2	1									
			2								
				2			4	5"	Extremely moist mixed orange and dark gray flyash, coarse silt to medium sand size, loose 5.0		
5							2		----- grades downward to -----		
	3	6							Wet dark gray flyash and cinders coarse silt to fine gravel size, noticed brown cloth, slightly deteriorated 7.0		
			11				19	12"	----- grades downward to -----		Continued on sheet 2.  Samples 2,4,6,8, with 2' long 2" OD sampler.  Samples 1,3,5,7,9 with 3' long 3" OD sampler.  Used 3' long 3" OD spoon for sample 9 - driving through 1.0 foot of plug inside augers before sampling.
				8							
					11						
	5	14							Wet dark gray cinders, fine sand to coarse gravel size with one concrete fragment, partially decomposed brown paper (bag?) 8.0		
			6								
	4	2									
			4								
				3			7	15"	Extremely moist dark gray silt loam (SANDY-SILT) with brown nearly vertical fine size roots, with partially deteriorated brown thin organic fiber oriented horizontally, noticed black organic fiber at 8.0 foot depth with one broken glass fragment, little very fine and fine size sand, increasing with depth, loose, (ML) 13.0		
10							2		----- grades downward to -----		
	5	3									
			8								See next sheet.
				7			15	26"			
					5						
	5	5									
			6								
	6	WE									
			3								
				2			5	11"			
15							4				
	7	4									
			2								Used 3' long 3" OD spoon for sample 9 - driving through 1.0 foot of plug inside augers before sampling.
				3			5	22"			
	7	6									

N = NUMBER OF BLOWS TO DRIVE 2 and 3" SPOON 12 " WITH 140 LB. WT. FALLING 30



# EARTH DIMENSIONS, INC.

Test Borings and Logs

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MONITORING

WELL

OW-53-86 continued

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd Street Landfill well installation LOCATION Near junction of Little Niagara  
1E85e Buffalo Avenue, Niagara Falls, New York and East Branch of Niagara River

CLIENT GEOTRANS/EPA and DOJ

DATE STARTED 1/28/86

COMPLETED \_\_\_\_\_

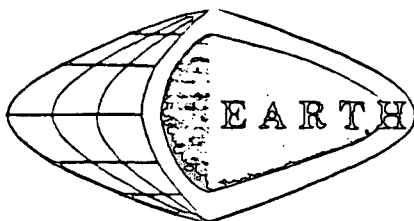
Sampled to refusal and installed casing 1/31/86.

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		0 6	6 12	12 18	18 24	N					
	7	6							Wet dark gray very fine sandy loam (SILTY-SAND), mostly very fine and fine size sand, little silt, loose with thin fine sand lenses, loose, soil material readily liquifies when disturbed, noticed one clam shell half in sample 7, (SM tending towards ML)		
	8	12									
			11								
				3		14	9"				
20					2						
	9	4							- - - - grades downward to -18.0 Wet dark gray gravelly loam sand (SAND) with 15 to 40% mostly rounded fine size gravel, fine to coarse size sand, trace silt with few fine broken shells, compact to 19.0 feet, loose below, weakly stratified, (SW)		
			4								
				5		9	21"				
					8						
	Overdrilled										
	10	4							- - - - grades downward to -21.0 Wet pinkish brown gravelly loam (SANDY-SILT) with 15 to 40% mostly subangular dolomitic gravel, with some fine to coarse size sand, trace clay, compact, massive soil structure, (ML)		
			5			11	4"				
				6							
					14						
25	11	14									
			25						- - - - grades downward to -24.0 Moist to extremely moist brown gravelly loam (SANDY-SILT) with 15 to 40% mostly subangular dolomitic gravel and occasional cobble, with some fine to coarse size sand, trace clay, very dense in place, brittle consistence, massive soil structure, (ML)		
				31		56	23"				
					33						
	11	40									
			54								
									12"		
	12	15									
			15			43	12"				
30				28							
					34						
	13	40							12"		
			106								
				100/4"							
	14	65									
			76								
				70		146	13"		13"		
					99						
	15	29									
			82								
35				80		162					

000442

Continued on sheet 3.

N = NUMBER OF BLOWS TO DRIVE 2 and 3 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.



# EARTH DIMENSIONS, INC.

Test Borings and Logs

East Aurora, New York 14052 • (716) 655-1717

*Summyary*  
*Copy*

MONITORING

WELL

OW-53-86

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd Street Landfill well installation LOCATION Near Junction of Little Niagara  
1E85e Buffalo Avenue, Niagara Falls, New York and East Branch of Niagara River  
CLIENT GEOTRANS/EPA and DOI DATE STARTED 1/28/86 COMPLETED 1/28/86

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		6"	12"	18"	24"	30"	N				
	15						100/4 1/2"		Moist to extremely moist brown gravelly loam (SANDY-SILT) with 15 to 40% mostly subangular dolo- mitic gravel and occasional cobble, with some fine to coarse size sand, trace clay, very dense in place, brittle consistence, massive soil structure, (ML)  - - - clear transition to - - -  Extremely moist olive gray gravel- ly loam (SANDY-SILT) with 15 to 40% mostly subangular dolomitic gravel and occasional cobble, with some fine to coarse size sand, trace clay, very dense in place, brittle consistence, massive soil structure, (ML)		Samples 19 and 20 taken with 3' long - 3" OD spoon.  Sample 20 taken from 41.0 to 41. foot depth.  Advanced 12 inch OD augers (6 1/2 inch ID) into bedrock between 41.3 to 41.8 foot depth.
	16	70									
			86					8"			
							100/3"				
	17	63									
			98					12"	41.0		
							100/4"				
	18	66									
							100/5"	10"			Advanced 12 inch OD augers (6 1/2 inch ID) into bedrock between 41.3 to 41.8 foot depth.
40											
45											Advanced 12 inch OD augers (6 1/2 inch ID) into bedrock between 41.3 to 41.8 foot depth.
50											Advanced 12 inch OD augers (6 1/2 inch ID) into bedrock between 41.3 to 41.8 foot depth.

000443

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.



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SURF. ELEV.

OW-53-86

PROJECT	<u>102nd Street Landfill well installation</u>	LOCATION	<u>Near Junction of Little Niagara</u>
1E85e	<u>Buffalo Avenue, Niagara Falls, New York</u>		<u>and East Branch of Niagara River</u>
CLIENT :	<u>GEOTRANS/EP&amp; and DOJ</u>	DATE STARTED	<u>1/28/86</u> COMPLETED <u>1/28/86</u>

[illegible]

Continued on  
sheet 4.

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW

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## Test Borings and Logs

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MONITORING

WELL . . . . . OW-53-86

SURF. ELEV.

PROJECT 102nd St. Landfill well install. LOCATION Near Junction of Little Niagara  
 1E85g Buffalo Avenue, Niagara Falls, NY and East Branch of Niagara River  
 CLIENT GEOTRANS/EPA and DOJ DATE STARTED 1/28/86 COMPLETED 1/28/86

CLIENT GEOTRANS/EPA and DOJ

DATE STARTED 1/28/86 COMPLETED 1/28/86

[illegible]

000445

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 LB. WT. FALLING 30 " PER BLOW.

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## MONITORING

WELL. ~~OW 54 86~~

SURF. ELEV.

PROJECT 102nd St. Landfill well install. LOCATION Southwest corner of Griffin  
 1E85g Buffalo Avenue, Niagara Falls, NY Park  
 CLIENT GEOTRANS/EPA and DOJ DATE STARTED 2/14/86 COMPLETED 2/14/86

CLIENT GEOTRANS/EPA and DOJ

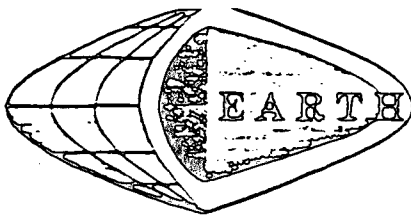
DATE STARTED 2/14/86 COMPLETED 2/14/86

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER					REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS	
		6	12	18	24	N					
1	8						2"	Frozen dark brown silt loam (CLAYEY-SILT) topsoil fill	(1)	0.5	Mostly soil fill to 4.0 feet over mostly incinerated garbage to 8.2 feet over coarse silty alluvial sediment to end of boring.
			7			12		(No recovery)	0.5		
2	4						5"	Extremely moist mixed black and distinctly mottled olive gray mostly silt loam (CLAYEY-SILT) soil fill with 5 to 15% slag fragment	(2)	3.0	Well installed approximately 3 feet north of sampled-described site due to sand bridge while attempting to install well.
			3			6					
							5"	Wet brown cinders, wood fragments, sand and gravel size	(3)	4.0	
						2					
3	2						5"	Wet brown cinders, wood fragments, sand and gravel size		4.5	
						2					
4	15						4"	Wet black cinders, burnt paper and wood, sand and gravel size, very loose			
			3			6					
							12"	Wet black cinders, sand and gravel size, gravel size slag and wood fragments, loose,			
						2					
5	1						12"	Extremely moist dark brown silt loam (SANDY-SILT), little very fine and fine size sand, very loose, brown partially deteriorated flat organic fiber oriented horizontally, reddish brown fine nearly vertical roots, (ML)		8.5	Noticed innertube in auger debris between 6.0-8.0 foot depth.
						4					
10										10.0	
15											

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

bs10668 BY Donald W. Owens/Soil Scientist

1 1 1



# EARTH DIMENSIONS, INC.

Test Borings and Logs

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MONITORING

WELL OW-55-86

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install. LOCATION Southwest corner of Griffin  
1E85g Buffalo Avenue, Niagara Falls, NY Park

CLIENT GEOTRANS/EPA and DOJ

DATE STARTED 2/17/86 COMPLETED 2/18/86

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER					REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		G	6	12	18	24				
									(2)	0.5
								Refer to OW-54-86 for description of alluvial sediment and incinerated garbage and soil fill above 10.0 foot depth.	Cement-bentonite grout Two (2) inch inside diameter black steel pipe	Started sampling in coarse silt-fine sand alluvial sediments to 21.0 feet over water sorted and deposited sand to 22.5 feet over loamy glacial till to end of boring.
								Extremely moist dark gray silt loam (SANDY-SILT), little very fine and fine size sand, very loose, brown partially deteriorated flat organic fiber oriented horizontally, few reddish brown nearly vertical roots, (ML)		(1) Bentonite pellet seal. (2) Protective casing.
5										
10									(1)	
	1	1								10.2
			12"				3	2"		
				2						
					7					
	2	WR								
			2				6	4"		
				4						
					4					
	3	3								
15			4							
				3			7	4"		
					3					
	4	1								
			5							
					2		7	3"		

000447

Continued on  
sheet 2.

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

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WELL : OW-57-86

SURF. ELEV.

PROJECT	<u>102nd St. Landfill well install.</u>	LOCATION	<u>West central, Griffon Park.</u>
1E85g	<u>Buffalo Avenue, Niagara Falls, NY</u>		<u>near Little Niagara River</u>
CLIENT	<u>GEOTRANS/EPA and DOJ</u>	DATE STARTED	<u>2/13/86</u> COMPLETED <u>2/14/86</u>

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS	
		U 6	6 12	12 18	18 24	N						
	1	18							Frozen dark gray silt loam (CLAYEY-SILT) topsoil with few glass fragments, (ML) Q 5	(1)	0.5	Difficulty augering with 14 inch, 8 1/2" ID augers, from surface to 2.0 foot depth.
			21				37	24"	Moist mixed dark gray about equal proportions silt loam (CLAYEY-SILT) soil fill and flyash and cinders, mostly coarse silt to fine sand size occasional gravel size, one gravel size slag fragment, few glass fragments			
			16						- - -grades downward to - 2.0			
	1	15					1		Moist mixed mostly dark gray to black with orange flyash and cinder, coarse silt to gravel size, compact			
			12						- - -grades downward to - 3.0			
	2	4						3"	Extremely moist mostly brown mixed silt loam (SANDY-SILT) soil fill with cinders, plastic fragments, one concrete fragment, very loose			
			4				6		- - -grades downward to - 5.0			
									Wet mostly dark gray one distorted plastic fragment 3" long, mixed with (SANDY-SILT) soil fill and cinders, loose			
									- - -grades downward to - 8.0			
	5						1		Wet dark gray mixed cinders with partially decomposed purple color carbon paper, glass, wood, plastic			
	3	4										
			4				7	3"				
	3	2					2					
			1									
	4	2										
			3				6	10"				
10							2					
	5	4									10.3	
			4				.8	2"				
							6					
	5	R									12.0	
			8									
	6	WH										
			WH				WH	4"				
			WH									
15							3					
	7	WR										
			WH				42	15"				
							1					
							2					
	8	WR										

Two (2) inch inside diameter black steel pipe  
Cement-bentonite grout  
Special coarse blend sand pack

See next sheet.

Continued on sheet 2.

N = NUMBER OF BLOWS TO DRIVE 263 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

RECORDED BY Donald W. Owens/Soil Scientist

000449

# EARTH

DIMENSIONS, INC.

## Test Borings and Logs

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## MONITORING

WELL · OW-57-86 continued

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install. LOCATION West central, Griffon Park,  
1E85g Buffalo Avenue, Niagara Falls, NY near Little Niagara River

CLIENT GEOTRANS / EPA and DOJ

DATE STARTED 2/13/86 COMPLETED 2/14/86

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS	
		6	12	18	24	N						
	8	WR						20"	Wet dark gray silt loam (SANDY SILT), loose, some very fine and fine size sand, weak thinly bedded, (ML tending towards SM) -grades downward to 13.0	2" ID black stainless steel pipe Super #6 slotted screen sand pack Special coarse blend sand pack	assumed 25.5 feet over very loose glacial till to end of boring.	
			1				(2)					
	9	WR										
20		WR						14"	Wet dark gray very fine sandy loam (SILTY-SAND) with <2% fine size gravel, very loose, weak thinly bedded with thin coarse silt lenses, soil material tends to liquify when disturbed, mostly very fine and fine size sand, some silt			20.5
			1				(2)					
			2									
	10	WR										
		WR						8"	coarse silt lenses, soil material tends to liquify when disturbed, mostly very fine and fine size sand, some silt			
			1				(2)					
	11	2							and fine size sand, some silt			
			2						few very fine broken white shell fragments, (ML)			
								12"	-grades downward to 15.0			
25									Wet dark gray silt loam (SANDY-SILT), very loose, some			
	12	7							very fine and fine size sand, weak thinly bedded, few very fine broken white shell fragments, (ML)			
			1					4"	-grades downward to 17.0			
									Wet dark gray very fine sandy loam (SILTY-SAND), very fine and fine size sand, little silt, weak thinly bedded with thin coarse silt lenses, very loose, soil material tends to liquify when disturbed, (SM tending towards ML)			
	13	WR							-grades downward to 24.0			
		WR						12"				
			WR									
30												

Continued on sheet 2A.

000450

N = NUMBER OF BLOWS TO DRIVE 263 " SPOON 12 " WITH 140 LB. WT. FALLING 30 " PER BLOW.

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QUEST 2 OF 24

# EARTH

# DIMENSIONS, INC.

## Test Borings and Logs

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MONITORING  
WELL

OW-57-86 continued

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install. LOCATION West central, Griffon Park,  
1E85g Buffalo Avenue, Niagara Falls, NY near Little Niagara River  
CLIENT GEOTRANS/EPA and DOJ DATE STARTED 2/13/86 COMPLETED 2/14/86

CLIENT GEOTRANS/EPA and DOJ DATE STARTED 2/13/86 COMPLETED 2/14/86

[illegible]

000451

N = NUMBER OF BLOWS TO DRIVE 263 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

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SHEET 2A OF 2A

DIMENSIONS, INC.

## Test Borings and Logs

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MONITORING  
WELL

OW-58-86

SURF. ELEV.

PROJECT	<u>102nd St. Landfill well install.</u>	LOCATION	<u>Outside of fence, south of</u>
REF	<u>Buffalo Avenue, Niagara Falls, NY</u>		<u>Buffalo Ave. west of restaur-</u>
			<u>ant-lounge</u>
CLIENT	<u>GEOTRANS/EPA and DOJ</u>	DATE STARTED	<u>2/5/86</u> COMPLETED <u>2/6/86</u>

DATE STARTED 2/5/86 COMPLETED 2/6/86

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS	
		6	12	18	24	N						
	1	4						9"	Extremely moist black silt loam (SANDY-SILT) topsoil fill, with little fine and medium size sand, few fine size reddish brown roots, compact, (ML)	(3)	0.5	Soil fill to 1.0 feet over flyash and cinders to 1.5 feet over unknown white material to 2.1 feet over coarse silty lake sediment to 4.2 feet over clayey lake sediment to end of boring.
		5				12				(1)	2.0	
			7							(2)	2.5	
	2	8							Extremely moist reddish brown (SILTY-CLAY) fill, stiff, with few fine gravel size broken brick fragments			
		10				22		14"				
			12									
	3	3							Extremely moist black flyash and cinders, fine sand to fine gravel size, compact		4.5	
		5						9"				
			8			13						
						16						
	4	8							Extremely moist white unknown substance, angular fine sand to fine gravel size			Samples 1 & 2 were obtained in same hole prior to augering with 14 inch auger, 8 1/2 inch inside diameter augers.
			15			37		19"				
			22						Extremely moist distinctly mottled brown silt loam (SANDY-SILT), compact, thinly bedded between 2.1 and 2.5 foot depth, with one bedded zone between about 2.9-3.1 foot depth, one thin bed black at 2.5 foot depth, little to some fine size sand, noticed few dark brown vertical roots, (ML)		9.5	
						28						
	5	7										
			14									
			18			32		15"				
						21						
									Moist distinctly mottled reddish brown (SILTY-CLAY), stiff, thinly laminated with very thin coarse silt lenses, with fine gravel size white calcium carbonate concretions, (CL)	(1)	5.5	(1) Cement-bentonite grout. (2) Bentonite pellet seal. (3) Protective waterbox casing.
									Moist faintly mottled reddish brown (SILTY-CLAY), hard, thinly laminated with very thin coarse silt lenses, (CL)			
									- - -grades downward to-		9.0	
									See next sheet.			Continued on sheet 1A.

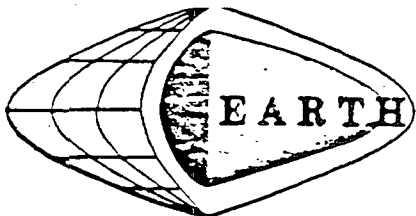
Continued on sheet 1A.

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

LOGGED BY Donald W. Owens/Soil Scientist

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000452



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Test Borings and Logs  
East Aurora, New York 14052 • (716) 655-1717

*Preliminary*  
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MONITORING  
WELL

OW-56-86 continued

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install. LOCATION Outside of fence, south of  
1E85e Buffalo Avenue, Niagara Falls, NY Buffalo Ave., west of restau-  
rant-lounge.  
CLIENT GEOTRANS/EPA and DOJ DATE STARTED 2/5/86 COMPLETED 2/6/86

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						DESCRIPTION & CLASSIFICATION	WATER TABLE & REMARKS
		0 6	6 12	12 18	18 24	24 30	N		
								Extremely moist grayish brown (SILTY-CLAY), hard, thinly laminated with very thin coarse silt lenses, (CL)	10.0
5									
10									
15									

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 LB. WT. FALLING 30 " PER BLOW.

000453

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S, INC. Copy

## Test Borings and Logs

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## MONITORING

**WISN**

OW-59-86

SURF. ELEV.

PROJECT 102nd St. Landfill well installation

1E85g Buffalo Avenue, Niagara Falls, NY

LOCATION Within 30 ft. inside of fence, just

west of restaurant/lounge

CLIENT GEOTRANS/EPA and DOJ

DATE STARTED 2/7/86 COMPLETED 2/7/86

[illegible]

000454

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

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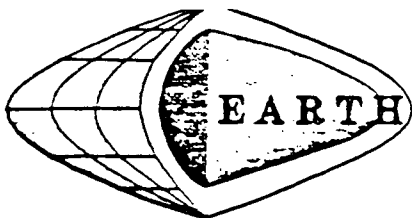
SURF. ELEV. \_\_\_\_\_

LOCATION Between outside fence and  
Buffalo Avenue

DATE STARTED 2/5/86 COMPLETED 2/6/86

000455

AS LOGGED BY Donald W. Owens (S-1) Collection



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Test Borings and Logs

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MONITORING

WELL OW-61-86

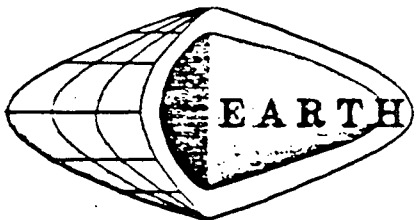
SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install. LOCATION Approx. 35 ft. south of fence  
1E85g Buffalo Avenue, Niagara Falls, NY west of gate fence to driller  
CLIENT GEOTRANS/EPA and DOJ DATE STARTED 2/10/86 COMPLETED 2/11/86

DEPTH Feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		6	12	18	24	N					
	1	4						13	Slightly frozen dark brown silt loam (SANDY-SILT) top-soil, loose, few fine brown roots, (ML) 0.5	1" ID black steel pipe	Soil fill to 0.5 feet over mostly white sludge to 0.7 feet over mostly soil fill to 1.5 feet over mostly white sludge to 4. feet over mostly flyash and cinder to 7.0 feet over clayey lake sediment to end of boring
			9				18				1
				9							
					8						
	2	1							Extremely moist white sludge, coarse silt to fine sand size, compact, 0.7		
			1								
				1			2	4"	Extremely moist brown silt loam (SANDY-SILT) fill with 5 to 15% black flyash, little fine size sand, compact, (ML) 1.5	(2)	3.5
					1						
5	3	2									
			1				2	2"			
				1					Extremely moist white sludge, coarse silt to fine sand size compact, 2.0		
	4	1									
			1						- - -clear transition to-		
				4			5	7"	Wet yellowish distinctly mottled mostly white sludge mixed with 10-20% black flyash, coarse silt to fine sand size, very loose, with nearly vertical brown fine to coarse size roots, 4.0		
					9						
	5	4									Added about 2 gallons water to hollow steel augers while trying to install the well
			10								
				16			26	10	Wet gray flyash and cinders, very fine to coarse sand size one gravel size broken orange brick fragment, mixed with 15% white sludge, very loose 6.0		
10					22				Wet gray flyash and cinders, medium size sand to coarse gravel size, occasional gravel size orange brick fragment, very loose 7.0		

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

000458



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Test Borings and Logs  
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*Preliminary*  
*Copy*

MONITORING  
WELL

OW-61-86 continued

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install. LOCATION Approx. 35 ft. south of fence  
1E85g Buffalo Avenue, Niagara Falls, NY west of gate fence to drilling  
CLIENT GEOTRANS/EPA and DOJ DATE STARTED 2/10/86 COMPLETED 2/11/86

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						DESCRIPTION & CLASSIFICATION	WATER TABLE & REMARKS
		0 6	6 12	12 18	18 24	24 30	N		
								Moist distinctly mottled brown (SILTY-CLAY), very stiff, thinly laminated with very thin coarse silt lenses, (CL) 10.0  Boring completed at 10.0 feet.	
5									
10									
15									

000457

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 LB. WT. FALLING 30 " PER BLOW.



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WELL.

MAI-1

SURF. ELEV.

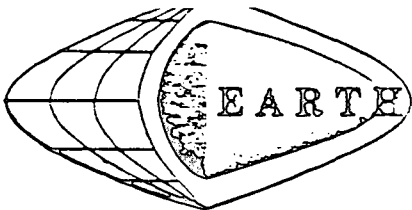
CLIENT GEOTRANS/EPA and DOI DATE STARTED 11/8/85 COMPLETED 11/8/85

000458

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

LOGGED BY Donald W. Owens/Soil Scientist

1 of 1



# EARTH DIMENSIONS, INC.

Test Borings and Logs  
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*Preliminary  
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REPLACEMENT  
MONITORING  
WELL

MW-2

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd Street Landfill well installation LOCATION About 4 feet east of abandoned  
1E85c Buffalo Avenue, Niagara Falls, New York  
CLIENT GEOTRANS/EPA and DOJ DATE STARTED 11/19/85 COMPLETED 11/19/85

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		0 6	6 12	12 18	18 24	N					
	1	3							Moist dark brown loam (SANDY-SILT) topsoil with one broken red brick fragment and numerous fine roots, loose, (ML) 0.5	2" ID black pipe (2)	Soil fill to 1.5 feet over industrial wast fill to 10.0 feet over silty original soil surface to 10.5 feet over very fine sand and coarse silt Lake Tonawanda sediment to end of boring.
			4			11	14"				
				7							
					8						
	2	12							Moist faintly mottled brown silt loam (SANDY-SILT) fill with few fine roots, compact, layered 1-4 inches thick, (ML) 1.5	2" ID black pipe (1)	
			22			68	12"				
				46							
					20						
	3	7							Moist black flyash, coarse silt to fine sand size, compact, one concrete chunk <3" in diameter 2.2	2" ID black pipe (1)	
			8								
				1		9	10"				
					2						
	4	4							Extremely moist to 2.5 feet moist below mostly dark gray mixed flyash, silt to coarse sand size, concrete chunks <3" in diameter, wood chips and broken red brick fragments 4.0	Slotted screen	Metal observed in sample 4 was gray in color, may be drum wall size in thickness. Noticed metal fragments in auger debris, appears to be part of a 10-20 gallon container (not 55 gallon). Difficult aug-ering 2.0 to 10.0 feet depth.
			7			12	7"				
				5					Extremely moist black flyash, fine silt to fine sand size and occasional gravel size, compact, 5.0	Special sand blend	
					54						
	5	8							Moist dark gray foundary sand, fine to coarse size sand, very loose - - - - grades downward to - - - - 6.0		
			13			25	10"				
				12							
10					5				Wet dark gray foundary sand, medium to coarse sand size, compact - - - - clear transition to - - - - 7.5		
	6	5									
			5								
				7		12	18"		Wet mostly dark gray mostly foundary sand, wood chips, broken red brick fragments and one piece of metal, very dense in place, loose when disturbed 8.0	Bentonite pellets	12.8 Noticed black liquid oily sheen to sample 4 and 5. Sample 2 had chemical odor.
					8						
									Wet black industrial waste sludge, silt size with metal fragments, possibly outlining a drum, wood (maybe board) at base of layer, dense 9.5		
15											
									Moist mixed black and reddish brown industrial fill, fine fibrous material, loose 9.8		(1) Bentonite pellet. (2) Cement-bentonite grout.
									Wet mixed gray and black industrial fill, sand and gravel size, loose 10.0		

Continued on sheet 1A.

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " 000459

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curr 1 -- 1A



Summary  
(copy)

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WELL

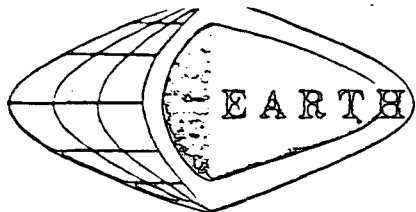
SURF. ELEV.

PROJECT 102nd Street Landfill well installation LOCATION About 4 feet east of abandoned  
 1B85c Buffalo Avenue, Niagara Falls, New York MW-P-4  
 CLIENT GEOTRANS/EPA and DOJ DATE STARTED 11/19/85 COMPLETED 11/19/85

000460

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

DIAGNOSED BY Donald W. Owens/Soil Scientist



# EARTH DIMENSIONS, INC.

Test Borings and Logs

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*Preliminary*  
*Copy*

MONITORING

WELL

ML-2

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd Street Landfill well installation LOCATION Between ML-1 and Niagara River

1E85a Buffalo Avenue, Niagara Falls, NY

CLIENT GEOTRANS/EPA and DOJ

DATE STARTED 12/16/85 COMPLETED \_\_\_\_\_

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		11 6	6 12	12 18	18 24	24 30	N				
	1	8							Extremely moist dark brown silt loam (CLAYEY-SILT) fill with one reddish brown broken brick, very stiff, noticed fine roots, (ML) 2.5	No well installed backfilled with cement-bentonite grout	Soil fill and demolition debris to 8.0 feet over soil fill to 8.5 feet over mostly flyash with slag industrial fill to 12.5 feet over silty alluvial sediment to 13.0 feet over coarse silty alluvial sediment to 14.0 feet over water sorted and deposited mostly fine sand with some silt to 20.2 feet over water sorted and deposited mostly sand and gravel, trace silt to 21.0 feet over soft loamy water deposited to end of boring.
			9				20	12"			
				11							
					14						
	2	13									
			6				14	12"			
				8							
					6						
	3	3									
5			3				7	8"			
				4							
					3						
	4	4									
			3								
				2			5	4"			
					3						
	5	3						8.0			
			4				10	11"			
				6				8.5			
10						4					
	6	17									
			23				71	18"			
				48							
					32						
	7	18									
			1				3	18"			
				2							
					4						
	8	2						12.5			
15			7								
				6			13	14"			
					7						
	9	2									
			3				9	18"			
				6							
	</										

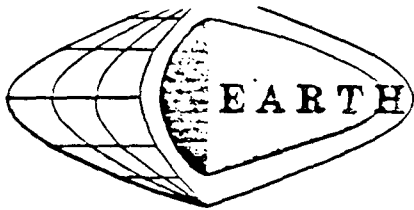
N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

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1 2

000461

Continued on sheet 2.



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Test: Borings and Logs

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*Preliminary  
Copy*

MONITORING

WELL

MW-3 continued

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd Street Landfill well installation LOCATION Between ML-1 and Niagara River

1E85a Buffalo Avenue, Niagara Falls, NY

CLIENT GEOTRANS/EPA and DOT

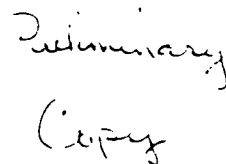
DATE STARTED 12/16/85 COMPLETED \_\_\_\_\_

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		11 6	6 12	12 18	18 24	N					
	0				2				Extremely moist dark gray silt loam (SANDY-SILT), very loose, with partially decayed organic fiber oriented horizontally, (ML) - - - - grades downward to -14.0	Gravels of mixed lithology	Lifted 6½ inch augers after augering to 25.0 feet and reinserted 8½ inch augers to 26.0 feet, abandoned hole, grouted through augers.
	10	1									
			2								
				3			5	15"			
20					2				Extremely moist dark gray fine sandy loam (SILTY-SAND), compact, weak thinly bedded, (SM) 20.2		
	11	11									
			14								
				47			61	13"			
					18				Wet gray gravelly loamy sand (SAND) with 20 to 40% mostly subrounded gravel, mostly medium to coarse size sand, very dense in place, loose when disturbed, stratified, (SP) 21.0		
	12	4									
			2								
				2			4	16"			
					2				Wet pinkish brown gravelly loam (SANDY-SILT) with 15 to 40% mostly subangular gravel, very dense in place, weak thinly bedded, (ML) 21.5		
25	13	3									
			2								
				2			4	12"			
					4				Wet pinkish brown gravelly loam (SANDY-SILT) with 15 to 40% mostly subangular dolomitic gravel, soft, massive soil structure, (ML) 26.0		
									Boring aborted at 26.0 feet.		
30											
25											

000462

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

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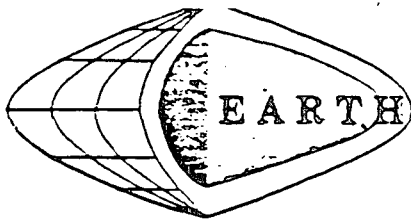


SURF. ELEV.

DATE STARTED 12/17/85 COMPLETED 12/17/85

000482

Pls LOGGED BY Donald W. Owens/Soil Scientist



# EARTH DIMENSIONS, INC. *Preliminary*

Test Borings and Logs  
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*C. J. J.*

## MONITORING

WELL MW-5

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd Street Landfill well installation LOCATION 4 feet west of center line of 48"  
1E85e Buffalo Avenue, Niagara Falls, New York storm sewer, 30 feet inland from  
CLIENT GEOTRANS/EDA and DOJ DATE STARTED 12/20/85 COMPLETED 12/20/85

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		11"	12"	18"	24"	N					
	1	54							Frozen to 0.5 feet moist below		
		18							dark gray gravelly silt loam		Mostly soil
			10			28	18"		(SANDY-SILT) fill with 15 to 40%		fill to 2.5
				7					gravel, compact, (ML) 1.5		feet over in-
	2	18							Moist mixed dark gray silt loam		dustrial waste
			7						(SANDY-SILT) and Brown silty		to 4.5 feet
						12	14"		clay loam (CLAYEY-SILT) with 5 to		over mostly
				5					15% gravel fill with orange		soil fill to
					4				broken brick fragment (CL-ML) 2.0		9.0 feet over
	3	7							Extremely moist reddish brown		mostly cobbly
			4			10	12"		(SILTY-CLAY) fill with 2 to 5%		fill to 10.0
				6					gravel and cinders, very stiff,		fill to 10.5
						5			(CL) 2.5		feet over demo-
	4								Extremely moist black mixed fly-		lition debris
									ash, cinders with occasional		to 11.0 feet
			15			42	12"		broken brick, silt to gravel size,		over apparent
						23			loose		water washed
									--- grades downward to -4.5-		(wave action)
	5	11							Extremely moist reddish brown		or layered
			11			37	12"		(SILTY-CLAY) fill with 5 to 15%	(1)	debris to 12.0
									mixed cinders, stiff, (CL)		feet over
									--- grades downward to -6.0-		apparent coarse
10									Extremely moist mixed black and		silty alluvial
	6	9							reddish brown silty clay loam		sediment to end
			10			16	10"		(CLAYEY-SILT) and silty clay		of boring.
						6			(CLAYEY-SILT) fill, very stiff,		
						10			9.0		
	7	2							Extremely moist gray cobble with	(2)	Hard augering
			1			3	2"		few wood fragments, loose when		from surface to
									disturbed 10.0		12.0 feet.
									Extremely moist black gravelly		
									loam (SAND-SILT-CLAY) fill with		
									15 to 40% mostly subangular		
									gravel, very stiff 10.5		
									Broken concrete and wood frag-		
									ments, loose when disturbed 11.0		Over augered to 14.5 feet.
											(1) Bentonite pellets.
											(2) #6 super slotted stain-
											less steel screen.
											Continued on sheet 1A

See next sheet.

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW

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000464



DIMENSIONS, INC.

## Test Borings and Logs

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WELL MW-5 continued

SURF. ELEV.

PROJECT 102nd Street Landfill well installation LOCATION 4 feet west of center line of 48"

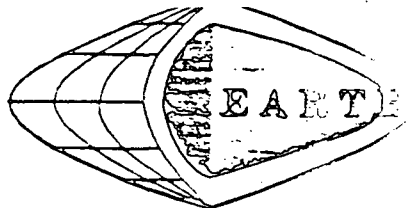
1E85e	Buffalo Avenue, Niagara Falls, NY	storm sewer, 30 feet inland from
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CLIENT GEOTRANS/EPA and DOJ DATE STARTED 12/20/85 COMPLETED 12/20/85

000465

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

Pls LOGGED BY Donald W. Owens/Soil Scientist



# EARTH DIMENSIONS, INC.

Test Borings and Logs

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Preliminary

## MONITORING

WELL

MW-6

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install.  
E85e Buffalo Avenue, Niagara Falls, NY

LOCATION 3½ feet east of centerline  
of sewer line 8 ft. from rip

CLIENT GEOTRANS/EPA and DOJ

DATE STARTED 1/7/86 COMPLETED 1/8/86

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		6	12	18	24	N					
	1	9						2"	Frozen mixed mostly dark brown silt loam (SANDY-SILT) fill with 10 to 20% reddish brown silty clay loam (CLAYEY-SILT) fill with 5 to 15% gravel, compact and very stiff, few fine brown roots, (ML and CL)	2 inch ID black steel pipe Cement and bentonite grout	Mostly soil fill to 6.9 feet over concrete and broken red brick fragments to 9.0 feet over soil fill to 10.3 feet over sand fill (possibly sewer bedding) to 10.5 feet over
	2	3						4"	grades downward to 3.0		
	3	1							Moist faintly mottled dark brown silty clay loam (CLAYEY-SILT) fill with 5 to 15% gravel, very stiff (ML-CL) clear transition to 4.5		6.0 broken red brick to 11.0 feet over silt alluvial sediments to end of boring.
	4	5						28"	Moist reddish brown silty clay loam (CLAYEY-SILT) fill with 5 to 15% gravel, very stiff (ML-CL) clear transition to 5.5		
	5	10							Moist mixed mostly dark brown silt loam (SANDY-SILT) and (CLAYEY-SILT) with 10 to 20% reddish brown silty clay loam (CLAYEY-SILT) in layers, compact and very stiff with 5 to 15% cinders and possibly some flyash, (ML-CL)		Augered with 14 inch augers 8½ inch ID from 7.5 to 9.0 foot depth
	6	5						3"	Concrete and broken red brick fragments		No visual evidence of contamination.
	7	3							Moist gray gravelly loam (SANDY-SILT) fill with 15 to 40% gravel, dense, (ML)		
	8	5						21"	Moist gray (SAND) fill, dense in place, loose when disturbed, medium to coarse size sand, (SW-SP)		
	9	5							Red broken brick		
	10	5									
	11	5								Special blend sand pack	
	12	5									
	13	5								(1) 13.0	
	14	5								REC-Recovery	
	15	5								(1) Bentonite pellet seal.	
	16	5								(2) Super #6 slotted stainless steel screen.	

See sheet 1A.

Continued on sheet 1A.

N = NUMBER OF BLOWS TO DRIVE 2 & 3" SPOON 12" WITH 140 lb. WT. FALLING 30" PER BLOW.

Dale M. Gramza/Geologist

LOGGED BY Donald W. Owens/Soil Scientist

000466



## Test Borings and Logs

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## MONITORING

WELL MW-6 continued

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install. LOCATION 3½ ft. east of center line of  
1E85e Buffalo Avenue, Niagara Falls, NY sewer line 8 ft. from rip rap

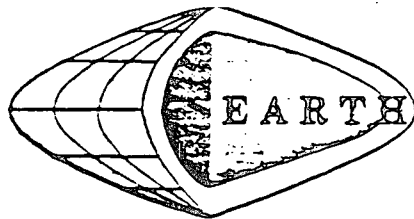
CLIENT GEOTRANS/EPA and DOJ DATE STARTED 1/7/86 COMPLETED 1/8/86

[illegible]

N = NUMBER OF BLOWS TO DRIVE 263 " SPOON 12 " WITH 140 LB. WT. FALLING 30 " PER BLOW.

Dale M. Gramza/Geologist

Collected by Donald W. Owens / Soil Scientist



# EARTH DIMENSIONS, INC.

Test Borings and Logs

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*Preliminary*

## MONITORING

WELL MW-7

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd Street Landfill well install LOCATION 4 ft. north of edge of pad, &  
1E85g Buffalo Avenue, Niagara Falls, NY ft. west of Mws offset

CLIENT GEOTRANS/EPA and DOJ DATE STARTED 1/13/86 COMPLETED \_\_\_\_\_

Set casing 1/17/86

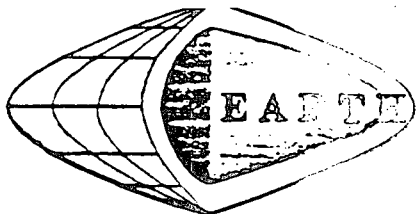
DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		0 6	6 12	12 18	18 24	24 30	N				
									Augered through crushed gravel fill.		Recently placed crushed fill to about 4.0 feet over mostly soil fill to 9.0 feet over hard fill debris (no sam- pling or recovery to 13.0 feet over mostly soil fill to 14.0 feet over coarse silty alluvial sediment to 16.0 feet over water sorted and deposited mostly fine size sand with some silt to 22.0 feet over water sorted and deposited mostly sand and gravel, trace silt to 22. feet over loamy glacial till to refusal. 1 and 3-5 split spoon samples obtained with 3 inch outside diameter, 3 foot long spoon, sample 2 with 2" OD-2 foot long spoon. Noticed fluores- cence in top 1 foot of sample #4
	1	5							Extremely moist dark brown fill, stiff, few fine brown roots, (ML)	5.0	
5			5								
				13			18				
				13				12"	Extremely moist dark brown mixed silt loam (CLAYEY-SILT) fill with cinders, slag, broken brick fragments, very stiff	7.0	
	1	21									
			11								
	2	7									
			5					3"	Extremely moist reddish brown silty clay loam (CLAYEY-SILT) fill with 5 to 15% gravel, slag and cinder fragments, stiff, (ML-CL)		
				6			11				
					60						
	3	100/3"									
10									- - -grades downward to -9.0 Very dense debris (No sam- pling below 9.2 feet) Extremely moist dark gray silt loam (CLAYEY-SILT) fill, firm, with brown nearly vertical fine root fiber, noticed rubber pieces	14.0	
	4	2							Extremely moist dark gray silt loam (SANDY-SILT), com- pact, with partially decayed organic fibers oriented horizontally, (ML)	16.0	
			4				9				
				5				23"			
15							8				
	4	11							- - -grades downward to -16.0		
			10								
	5	6							Extremely moist dark gray fine sandy loam (SILTY-SAND), compact, thinly bedded, (SM)		
			6								
				6			12	30"			

Continued on

sheet 2

000468

N = NUMBER OF BLOWS TO DRIVE 2 & 3 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.



# EARTH DIMENSIONS, INC.

Test Borings and Logs

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Preliminary

## MONITORING

WELL MW-7 continued

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install.  
1E85g Buffalo Avenue, Niagara Falls

LOCATION 4 ft. north of edge of pad, 8  
ft. west of MW3 offset.

CLIENT GEOTRANS/EPA and DOT

DATE STARTED 1/13/86 COMPLETED \_\_\_\_\_

Set casing 1/17/86

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		4	6	12	18	24	N				
	5					6					
	5	5									Augered with 14
			5								inch (6½" inside
	6	1									diameter) augers.
20				2			3	9"	Extremely moist dark gray		
					1				fine sandy loam (SILTY-		Samples 6 and 9
						2			SAND), compact, thinly		obtained with 2
	7	13							bedded (SM)		inch OD-2 foot
			3				6				long split spoon
					3					22.0	sampler, samples 7
						6					8 and 10-12
	7	6						17"	Wet gray gravelly loamy sand		secured with 3 inc
			6						(SAND) with 20 to 40% mostly		OD-3 foot long
	8	4							subrounded gravel, mostly		split spoon sam-
									medium to coarse size sand,		pler.
									loose, stratified,		
25			4				8		(SW-SP) 22.5		
				4					Wet pinkish brown gravelly		
					4				loam (SANDY-SILT) with 15 to		
						5		24"	40% mostly subangular gray		
	8	6							dolomitic gravel, loose,		
			6						massive soil structure, (ML)		
	9	3									
			5								
					5		10	18"			
						8					
	10	4									
22			7				17	19"			
				10					31.0		
					10				-grades downward to-		
	10	20							Extremely moist brown gra-		
						29			velly loam (SANDY-SILT) with		
	11	18							15 to 40% mostly subangular		
			22						gray dolomitic gravel, some		
							48	13"	fine to coarse size sand,		
					25				very dense, massive soil		
						36			structure, (ML)		
	12	20									
35			58					26"			

000469

Continued on  
sheet 3.

N = NUMBER OF BLOWS TO DRIVE 2 & 3" SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

BS LOGGED BY Dale M. Gramza/Geologist

2 3

# EARTH

# DIMENSIONS, INC.

Preliminary

## Test Borings and Logs

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## MONITORING

WELL        MW-7 continued

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install.  
1E85g Buffalo Avenue, Niagara Falls

LOCATION 4 ft. north of edge of pad, 8  
ft. west of MW3 offset.

CLIENT GEOTRANS/EPA and DOJ

DATE STARTED 1/13/86 COMPLETED Set casing 1/17/86

[illegible]

000470

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

bsLOGGED BY Dale M. Gramza/Geologist



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WELL MW-7 continued

SURF. ELEV.

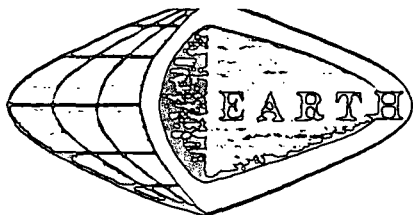
PROJECT 102nd St. Landfill well install. LOCATION 4 ft. north of edge of pad, &  
1E85g Buffalo Avenue, Niagara Falls ft. west of MW3 offset.

CLIENT GEOTRANS/EPA and DOJ

DATE STARTED 1/13/86 COMPLETED Set casing 1/17/86

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

bsLOGGED BY Dale M. Gramza/Geologist



# EARTH DIMENSIONS, INC.

Test Borings and Logs

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## MONITORING

WELL MW-7 continued

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install. LOCATION 4 ft. north of edge of pad, 1E85g Buffalo Avenue, Niagara Falls, NY ft. west of MW-3 offset

CLIENT GEOTRANS/EPA and DOJ DATE STARTED 4/16/86 COMPLETED 4/16/86

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		0 6	6 12	12 18	18 24	N				
55								Dolomite, light brownish gray, fine grained, hard, thin to medium bedding, some shale in partings spaced 2 to 10", noticed carbonaceous shale partings below 48.3 feet, noticed stromatolites in partings at 48.7 feet, with moderate weathering along partings, noticed selenite seam 1/8" thick at 46.8 feet - clear transition to - 48.7	NX open bedrock core hole	56.2
60								Dolomite, gray, fine grained, hard, thinly bedded, shale partings spaced 2 to 9", noticed selenite in partings and vugs below 50.8 foot depth, moderately weathered along partings - - grades downward to - 51.2		
65								Dolomite, brownish gray, fine grained, hard, very thin to thinly bedded, shale partings spaced 1/2 to 11", moderately weathered in partings, noticed selenite in partings from 51.5 to 52.0 feet, shale partings become carbonaceous below 53.5 feet, abundant shale laminations spaced 1/8 to 3", noticed some curved bedding between 55.3 and 55.5 feet, noticed small vug with pyrite at 53.9 foot depth 56.2		
70								Coring completed at 56.2 feet.		

000472

000472

N = NUMBER OF BLOWS TO DRIVE \_\_\_\_\_ " SPOON \_\_\_\_\_ " WITH \_\_\_\_\_ lb. WT. FALLING \_\_\_\_\_ " PER BLOW.



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Preliminary

WELL MW-0

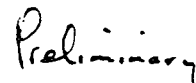
SURF. ELEV.

PROJECT 102nd St. Landfill well install. LOCATION of NE corner of landfill south  
1E85g Buffalo Avenue, Niagara Falls, NY towards river 15 ft west of  
CLIENT GEOTRANS/EPA and DOJ east side fence. DATE STARTED 1/22/86 COMPLETED \_\_\_\_\_

000473

Continued on  
sheet 2.

N = NUMBER OF BLOWS TO DRIVE 253 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.



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SURF. ELEV. \_\_\_\_

LOCATION Approx. 2/3rds distance south  
of NE corner of landfill sou-  
towards river. 15 ft. west of  
east side fence.

DATE STARTED 1/22/86 COMPLETED \_\_\_\_\_

000474

RECORDED BY Dale M. Grams (Geologist)



Preliminary

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MW-10

SURF. ELEV.

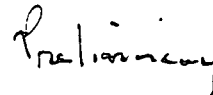
LOCATION North 7 ft. off west side

entrance post, entrance to

consultant trailer  
DATE STARTED 1/14/86 COMPLETED 1/14/86

000475

[illegible]



Test Borings and Logs  
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SURF. ELEV. \_\_\_\_\_

CLIENT GEOTRANS/EPA and DOJ DATE STARTED 1/14/86 COMPLETED 1/15/86

000476

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW



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(copy)

MW-11

SURF. ELEV.

fence, ENE side of sewer

DATE STARTED 1/24/86 COMPLETED 1/24/86

HYDROLOGGED BY Donald W. Owens/Soil Scientist

255

30" PER BLOW

000477



Summary  
Copy

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WELL MW-11 continued

SURF. ELEV. \_\_\_\_\_

PROJECT	<u>102nd Street Landfill well installation</u>	LOCATION	<u>About 12 feet inside road entrance</u>
1E85e	<u>Buffalo Avenue, Niagara Falls, New York</u>		<u>fence, ENE side of sewer</u>
CLIENT	<u>GEOTRANS/EPA and DOJ</u>	DATE STARTED	<u>1/24/86</u> COMPLETED <u>1/24/86</u>

000478

N = NUMBER OF BLOWS TO DRIVE 2 and 3" SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

[illegible]



# Preliminary

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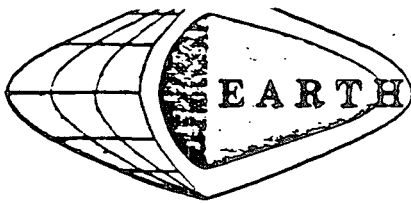
WELL MW-12

SURF. ELEV. \_\_\_\_\_

PROJECT	<u>102nd St. Landfill well install.</u>	LOCATION	<u>Approximately 10 ft. north</u>
1E85g	<u>Buffalo Avenue, Niagara Falls, NY</u>		<u>fence, 120 ft. west of east</u>
			<u>fence line</u>
CLIENT	<u>GEOTRANS/EPA and DOJ</u>	DATE STARTED	<u>1/16/86</u> COMPLETED <u>1/16/86</u>

000479

N = NUMBER OF BLOWS TO DRIVE 2 & 3 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.



# EARTH DIMENSIONS, INC.

Test Borings and Logs

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*Handwritten:* Confirmation  
Copy

MONITORING  
WELL

MW-13

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install. LOCATION 5.0 feet south of existing  
1E85g Buffalo Avenue, Niagara Falls, NY MW-14.

CLIENT GEOTRANS/EPA and DOJ DATE STARTED 4/14/86 COMPLETED 4/14/86

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		0 6	6 12	12 18	18 24	24 30	N			
								Drilling without sampling to 8.5 foot depth.  Refer to log MW-14 for sample descriptions.	2" ID black steel pipe Cement-bentonite grout 3.0 (1) 4.05 4.8 (2) 7.3 7.9 (1) 8.5	Slow augering below 5.0 feet.  (1) Bentonite pellets. (2) Super #6 slotted stainless steel screen.
5										
								Augering completed at 8.5 feet. No water at com- pletion.	(1) 8.5	
10										
15										

000480

N = NUMBER OF BLOWS TO DRIVE \_\_\_\_\_ " SPOON \_\_\_\_\_ " WITH \_\_\_\_\_ lb. WT. FALLING \_\_\_\_\_ " PER BLOW.

BSLOGGED BY Dale M. Gramza/Geologist

SHEET 1 OF 1



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SURF. ELEV. \_\_\_\_\_

CLIENT GEOTRANS/EPA and DOI DATE STARTED 4/11/86 COMPLETED 4/11/86

N = NUMBER OF BLOWS TO DRIVE 2 and 3" SPOON 12" WITH 140 lb. WT. FALLING 30" PER BLOW.

000481



## Test Borings and Logs

Copy

WELL MW-14 continued

SURF. ELEV.

LOCATION Approx. 150 ft. south of  
Buffalo Ave. 20 ft east of e  
fence line

DATE STARTED 4/11/86 COMPLETED 4/11/86

DATE STARTED 4/11/86 COMPLETED 4/11/86

000482

RELICENSED BY Dale M. Gramza / Geologist

CHURCH



C. Coy

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WELL MW-15

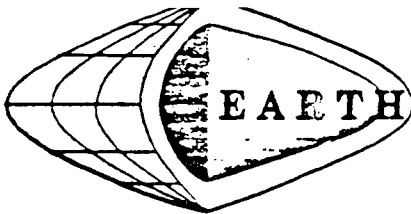
SURF. ELEV. \_\_\_\_\_

PROJECT	<u>102nd St. Landfill well install.</u>	LOCATION	<u>5 feet North of existing</u>
1E85g	<u>Buffalo Avenue, Niagara Falls, NY</u>		<u>MW-16.</u>

CLIENT GEOTRANS/EPA and DOJ DATE STARTED 4/10/86 COMPLETED 4/10/86

000483

N = NUMBER OF BLOWS TO DRIVE \_\_\_\_\_ " SPOON \_\_\_\_\_ " WITH \_\_\_\_\_ "lb. WT. FALLING \_\_\_\_\_ " PER BLOW.



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Test Borings and Logs

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MONITORING

WELL MW-16

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install. LOCATION Approx. 400 ft south of Buffalo  
1E85g Buffalo Avenue, Niagara Falls, NY Ave. 20 ft east of east fence  
CLIENT GEOTRANS/EPA and DOJ DATE STARTED 4/9/86 COMPLETED 4/10/86

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		U	6	12	18	24	N				
	1	10							Moist dark brown silty clay loam (CLAYEY-SILT) fill with 5 to 15% subangular gravel, very stiff, (ML) 0.5	Two inch inside diameter black steel pipe Cement-bentonite grout	Soil fill to 0.5 feet over flyash and cinders to 5.0 feet over silty Lake Tonawanda soil fill to 6.5 feet over fine sandy alluvial sediments to 16.5 feet over water sorted and deposited mostly sand and gravel to 17.0 feet over loamy glacial till to end of boring.
			14					30			
				16							
					11			20"	Moist dark gray flyash and cinders, coarse silt to gravel size, with some gravel size slag and cement fragments noticed wood fragment at 1.7 feet - grades downward to - 2.0		
	1	5									
			4								
	2	8									
			6					11"			
				4							
5						3			Wet dark gray to black flyash and cinders, coarse silt to gravel size slag and concrete fragments, loose, 5.0		
	2	2								Two inch inside diameter black steel pipe Cement-bentonite grout	5.2
			4					7			
				3				25"	Moist distinctly mottled olive gray silty clay loam (CLAYEY-SILT) fill, firm, (ML-CL) 6.0		
						5					
	3	5									
			5								
	4	1							Moist faintly mottled olive gray silt loam (SANDY-SILT) fill, loose, (ML) - grades downward to - 6.5		
				1				2			
					1			12"			
10						1			Extremely moist olive gray very fine sandy loam (SILTY-SAND), loose, with some silt, with some partially decomposed root fiber oriented horizontally, weak thinly bedded, (SM-ML) - grades downward to - 8.0		
	5	WH								Two inch inside diameter black steel pipe Cement-bentonite grout	7.2
			2					5			
				3				22"	Noticed slight chemical odor to sample #2,3, and 4.		
					2						
	5	3									
			3								
	6	WR						10"	Wet dark gray very fine sandy loam (SILTY-SAND), very loose few fine size black root fibers oriented vertically, some silt, weak thinly bedded (SM tending towards ML) - grades downward to - 16.5		
			WR								
				WH							
15						WH					
	7	2								Super #6 slotted stainless steel screen Special blend sand pack	11.5
								18			
						10		28"			
							9		See next sheet.		
	7	36									

N = NUMBER OF BLOWS TO DRIVE 2 & 3 " SPOON 12 " WITH 140 lb. WT. FALLING 30 PER BLOW.



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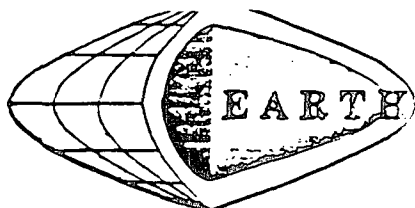
MW-16 continued

SURF. ELEV. ....

PROJECT 102nd St. Landfill well install. LOCATION Approx. 400 ft. south of Buff.  
1E85g Buffalo Avenue, Niagara Falls, NY Ave. 20 ft east of east fence  
line  
CLIENT GEOTRANS/EPA and DOJ DATE STARTED 4/9/86 COMPLETED 4/10/86

000485

N = NUMBER OF BLOWS TO DRIVE 2 & 3 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.



# EARTH DIMENSIONS, INC.

Test Borings and Logs  
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MONITORING  
WELL

MW-17

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install. LOCATION Near river  
1E85g Buffalo Avenue, Niagara Falls, NY

CLIENT GEOTRANS/EPA and DOJ DATE STARTED 4/17/86 COMPLETED 4/18/86

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		6	6	12	18	24	N				
	1	8							Extremely moist dark gray silt loam (CLAYEY-SILT) fill with 5 to 15% gravel, little fine to coarse size sand, compact, (ML) 1.0		Augered with 14 inch OD, 8 1/2 inch ID augers.
			6				16				
				10				26"			
					12						
	1	14							Moist mixed dark gray silty clay loam (CLAYEY-SILT) and reddish brown gravelly loam (SAND-SILT-CLAY) fill with 15 to 40% gravel, trace slag and reddish brown broken brick fragments, little fine to coarse size sand, compact, (ML-CL) 2.0		(1) Bentonite pellet seal.
			11								
	2	14									
			11				16				
				5							
5							3	6"			Mostly soil fill to 2.0 feet over crush sand and gravel fill to 5.0 feet over mostly soil fill with cinder-flyash interlayers to 7.5 feet over flyash and cinder fill to 8.0 feet over wavy wash mostly sand and gravel alluvial sediment to 11. feet over silty alluvial sediment to 13.0 feet over coarse silty alluvial sediment.
	3	1									
			3				8				
				5							
					7			21"			
	3	4							Moist gray crush sand and gravel fill containing boulders (maybe part of rip-rap), loose when disturbed 5.0		
			4								
	4	2							Moist brownish gray gravelly loam (SANDY-SILT) fill with 15 to 40% gravel, little fine to coarse size sand, very loose, (ML) 5.5		
			1				2	4"			
				1							
10							5				
	5	5							Extremely moist dark gray flyash and cinders, fine silt to coarse sand size, loose, 6.0		
			6				12				
				6				22"			
					6				Extremely moist to 6.5, moist below mixed dark gray silt loam (CLAYEY-SILT) and reddish brown gravelly loam (SAND-SILT-CLAY) fill with 15 to 40% gravel, trace slag and cinder fragments, (ML-CL) 7.5		
	5	9									
			10								
	6	1									
			2				4	18"			
				2							
15							3				
	7	3							Extremely moist dark gray flyash and cinders, fine silt to coarse sand size, loose, 8.0		
			4				10	33"			
				6							
					8						
	7	1							See next sheet.		

Two inch inside diameter black steel pipe  
Cement-bentonite grout  
(1)  
Special blend sand pack

Continued on  
sheet 2.

000486

N = NUMBER OF BLOWS TO DRIVE 2 & 3 " SPOON 12 " WITH 140 LB. WT. FALLING 30 " PER BLOW.



## Test Borings and Logs

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WELL.

MW-17 continued

SURF. ELEV.

PROJECT 102nd St. Landfill well install. LOCATION Near river  
1E85g Buffalo Avenue Niagara Falls, NY

CLIENT GEOTRANS / EPA and DOJ

DATE STARTED 4/17/86 COMPLETED 4/18/86

N = NUMBER OF BLOWS TO DRIVE 2 & 3 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

bs:GGED BY Donald W. Owens / Soil Scientist





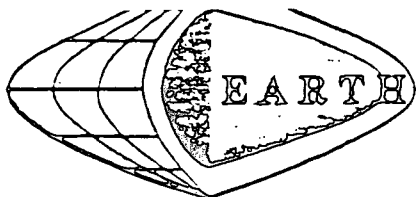
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SURF. ELEV. \_\_\_\_\_

DATE STARTED 4/22/86 COMPLETED 4/22/86

000489

PAGE 1 OF 1



# EARTH DIMENSIONS, INC.

Test Borings and Logs  
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MONITORING

WELL MW-19

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install. LOCATION Southwest corner of Olin  
1E85g Buffalo Avenue, Niagara Falls, NY

CLIENT GEOTRANS/EPA and DOJ

DATE STARTED 4/23/86 COMPLETED 4/23/86

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER					REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		6	12	18	24	N				
	1	0					25"	Extremely moist dark brown silt loam (CLAYEY-SILT) top-soil fill with 5 to 15% sub-angular gravel, very stiff, (ML) 0.8	Cement-bentonite grout	Mostly soil fill to 2.5 feet over slag or concrete fragments to 3.0 feet over mostly soil fill to 5.0 feet over flyash and cinder fill to 8.5 feet over white sludge to likely 10.0 feet over possibly wood to 11.0 feet over silty alluvial sediment to 11.5 feet over coarse silty alluvial sediment to 22.5 feet over water sorted and deposited mostly fine to coarse size sand, little gravel to 23.5 feet over stratified sand and gravel to 31.5 feet over clayey lake sediment to 32.5 feet over loamy glacial till to end of boring.
			11			26	25"			
				15			25"			
					64		25"			
	1	41					25"	Moist reddish brown gravelly silt loam (SANDY-SILT) fill with 15 to 40% mostly sub-angular dolomitic gravel, very dense, (ML) 2.5		
			13				25"			
	2	3					9"	Moist mixed tan and grayish brown gravelly (SAND) with 15 to 40% fine to medium size angular concrete and/or slag gravel, very dense in place, loose when disturbed 3.0		
			6			11	9"			
				5			9"			
5					8		9"			
	3	5					18"	Moist reddish brown silt loam (SANDY-SILT) fill with 5 to 15% gravel, some very fine size sand, compact, (ML) 4.5	Two inch inside diameter black steel pipe Special blend sand pack	11.0 feet over stratified sand and gravel to 31.5 feet over clayey lake sediment to 32.5 feet over loamy glacial till to end of boring. NR-No Recovery. REC-Recovery
			7				18"			
				2		9	18"			
					3		18"			
	2	6					3"	Moist dark gray very fine sandy loam (SILTY-SAND) fill with 5 to 15% fine to medium size gravel, some silt, compact, (SM tending towards ML) 5.0		
			9				3"			
	4	4					3"			
		WH					3"			
				WR			3"			
							3"			
10						1	NR	Extremely moist to 6.0 feet, wet below mixed dark gray and black flyash and cinders coarse silt to gravel size with 2 rubber fragments at 7.0 feet and cardboard at 7.8 feet, loose 8.5		
	5	50	3"				NR			
							NR			
	6	4					23"	Extremely moist white sludge coarse silt size, very loose 11.0		
			4				23"			
				5		9	23"			
					6		23"			
	6	8					23"			
			7				23"			
	7	WH					23"			
15							23"			
			1				23"			
						2	9"			
						1	9"			
						1	9"			
	8	2					28"	See next sheet.		
			2				28"			
						5	28"			
						3	28"			

N = NUMBER OF BLOWS TO DRIVE 2 & 3" SPOON 12" WITH 140 LB. WT. FALLING 30" PER BLOW.

Dale M. Gramza/Geologist

bsLOGGED BY Donald W. Owens/Soil Scientist

SHEET 1 OF 2

000490



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MW-19 continued

SURF. ELEV.

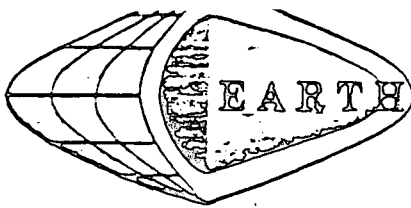
PROJECT	102nd St. Landfill well install.	LOCATION	Southwest corner of Olin
1E85g	Buffalo Avenue, Niagara Falls, NY		

CLIENT GEOTRANS/EPA and DOJ DATE STARTED 4/23/86 COMPLETED 4/23/86

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS	
		0 6	6 12	12 18	18 24	N						
	8				4				Wet black silt loam (CLAYEY-SILT), stiff, with flat organic fiber oriented horizontally at upper contact of horizon, many fine to coarse size roots, (OL-ML)	2 inch ID black steel pipe Special blend sand pack	Noticed strong chemical odor to sample 3 - upper part of sample 6. Lost stainless steel tape weight at 15.0 foot dept	
	8	4							- - -grades downward to -11.5			Water table at 5. feet below surface at 9 am after augering to 10.2 feet late afternoon the previous day.
			3						Extremely moist faintly mottled dark gray silt loam (SANDY-SILT), loose, some fine to medium size nearly vertical roots, mottling only along some root channels, little fine size sand, (ML)			Samples 1,3,5,6,8, 10,12, and 14 were obtained with 3" C 3 ft. long split spoon.
20	9 WR		2			4			- - -clear transition to -14.0			26.5 samples 2,4, 7,9,11, and 13 were obtained with 2" OD-2 ft. long split spoon.
				2					Wet dark gray silt loam (SANDY-SILT) with 5% gravel, very loose to 16.0 feet, loose below, some fine size sand, weak thinly bedded, trace brown very fine vertical roots, (ML)			
	10	7							- - -grades downward to -22.5			
			6						Wet dark gray loamy sand (SAND) with 5 to 15% mostly rounded gravel, fine to coarse size sand, trace silt, compact, weak thinly bedded, (SM)			
					20				- - -clear transition to -23.5			
					17				Wet dark gray very gravelly loamy sand (SAND) with 40 to 60% mostly rounded gravel, medium to coarse size sand, trace silt, few broken white shell fragments, stratified, compact, loose when disturbed, (SP, GW)			Sample 13 is contaminated with NAPL based on smell and visual evidence.
	10	21							- - -clear transition to -31.5			
25	11 WR								See next sheet.	Super #6 slotted stainless steel screen Bentonite pellets	31.5 32.0 34.5	
			3			10	3"					Continued on sheet 3.
				7								
	12	9										
			7			16	14"					
				9								
					21							
	12	34										
			30									
30			25									
				16		31	3"					
					12							
	14	3										
			3									
				1		4	20"					
					3							
	14	4										
			4									
35												

N = NUMBER OF BLOWS TO DRIVE 263 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

SHEET 2 OF 3



# EARTH DIMENSIONS, INC.

Test Borings and Logs

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MONITORING

WELL MW-19 continued

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St Landfill well install. LOCATION Southwest corner of Olin  
1E85g Buffalo Avenue, Niagara Falls, NY

CLIENT GEOTRANS/EPA and DOJ DATE STARTED 4/23/86 COMPLETED 4/23/86

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						DESCRIPTION & CLASSIFICATION	WATER TABLE & REMARKS
		0	6	12	18	24	N		
								Wet reddish brown (SILTY-CLAY), firm, thinly laminated with very thin coarse silt lenses, (CL) 32.5	Sample 14 is highly contaminated with an intense odor and brown liquid.
20								Extremely moist reddish brown gravelly loam (SANDY-SILT) with 15 to 40% mostly sub-angular dolomitic gravel, some fine to coarse size sand, loose, massive soil structure, (ML) 34.5	
								Augered to 34.5 feet.	Water table 2½ hours after sampling completion at 15.0 feet below surface.
25									WR-Sampler penetration with weight of rods only.
									WH-Sampler penetration with weight of rods and hammer.
30									
35									

000492

N = NUMBER OF BLOWS TO DRIVE 2 & 3 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

LOGGED BY Donald W. Owens/Soil Scientist

3 of 3

# EARTH

DIMENSIONS, INC.

## Test Borings and Logs

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## MONITORING

WELL MW-20

SURF. ELEV.

PROJECT	102nd St. Landfill well install.	LOCATION	Adjacent to MW-19, 4.0 feet
1E85g	Buffalo Avenue, Niagara Falls, NY		to the north

CLIENT GEOTRANS/EPA and DOJ

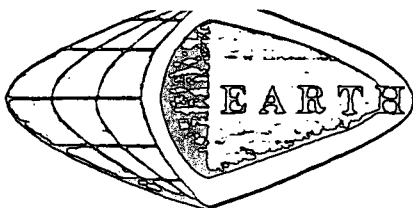
DATE STARTED 4/25/86 COMPLETED 4/25/86

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER					DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		u 6	6 12	12 18	18 24	N			
							Drilling without sampling to 12.0 foot depth.	2" ID black steel pipe	
								cement-bentonite grout	4.0
							Refer to log MW-19 for description of soil fill and waste.	(1)	5.0
5									6.0
								Super #6 slotted stainless steel screen	
								Special blend sand pack	
									11.0
									11.5
10								(1)	12.0
							Augering completed at 12.0 feet.	Water table at 10.0 feet below surface at completion.	
15									

000493

N = NUMBER OF BLOWS TO DRIVE        " SPOON        " WITH        lb. WT. FALLING        " PER BLOW.

Designed by Dale M. Gramza / Geologist



# EARTH DIMENSIONS, INC.

Test Borings and Logs

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MONITORING

WELL MW-21

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install. LOCATION 12 ft east of northeast corner of spoil cell  
1E85g Buffalo Avenue, Niagara Falls, NY

CLIENT GEOTRANS/EPA and DOJ DATE STARTED 4/22/86 COMPLETED 4/22/86

DEPTH feet	SAMPLE NO.	BLOWS ON SAMPLER						REC	DESCRIPTION & CLASSIFICATION	WELL	WATER TABLE & REMARKS
		6	12	18	24	30	N				
	1	3						27"	Extremely moist dark brown silt loam (SANDY-SILT) topsoil fill, compact, with abundant fine roots, (ML) 0.5	2" ID black steel pipe Cement-bentonite grout	Topsoil fill to 0.5 feet over clayey soil fill to 1.5 feet over mostly flyash and cinders to 11.8 feet over fine silty alluvial sediment to 12.5 feet over clayey lake sediment to end of boring
			7				15				
				8							
					15						
	1	3							Moist reddish brown silty clay loam (CLAYEY-SILT) fill, very stiff, with large size root material, (ML-CL) 1.5	2" ID black steel pipe Cement-bentonite grout	
			5								
	2	4									
			5								
				9			14	5"	Moist black flyash and cinders coarse silt to gravel size, noticed glass fragment at 2.0 foot depth, some rubber pieces at 2.3 foot depth, noticed light brown flyash between 2.1 and 2.8 feet, compact, loose when disturbed	(1)	
5					4						
	3	4									
			9								
				5			14	17"		Super #6 slotted stainless steel screen Special blend sand pack	
					3						
	3	3									
			2								
	6	1							Extremely moist black flyash and cinders, coarse silt to coarse sand size, little to some medium size gravel, compact, loose when disturbed	(1)	Samples 1, 3, and 5 obtained with 3" OD-3' long split spoon.
			1				2	4"			
				1							Samples 2 and 4 obtained with 2" OD-2' long split spoon.
10						WH					
	5	2							Wet mixed tan and light brown flyash and cinders, fine sand to gravel size cinders, loose	(1)	
			2								
				3			5	25"			
					4						
	5	8							Wet mixed tan and light brown cinders, coarse silt to coarse sand size, noticed glass fragment at 8.3 feet, some small wood fragments at 8.5 feet, one coarse size gravel piece at 9.0 foot depth, very loose, tends to liquify when disturbed below 9.0 foot depth	(1)	WH- Sampler penetrating with weight of rods and hammer.
				5							
15									tends to liquify when disturbed below 9.0 foot depth	(1)	Bentonite pellets.
										(1)	Water level at 9.0 feet below surface at completion.
									See next sheet.	(1)	

Continued on sheet 1A.

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 LB. WT. FALLING 30 " PER BLOW.

LOGGED BY Dale M. Gramza/Geologist

000494

**DIMENSIONS, INC.**

## Test Borings and Logs

East Aurora, New York 14052 • (716) 655-1717

## MONITORING

WELL MW-21 continued

SURF. ELEV. \_\_\_\_\_

PROJECT 102nd St. Landfill well install. LOCATION 12 ft east of northeast cor-  
1E85g Buffalo Avenue, Niagara Falls, NY ner of spoil cell.

CLIENT GEOTRANS/EPA and DOJ DATE STARTED 4/22/86 COMPLETED 4/22/86

[illegible]

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

RECORDED BY Dale M. Grama / Geologist











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MW-22

SURF. ELEV.

PROJECT 102nd St. Landfill well install. LOCATION Approx. 40 ft. from rip rap  
 1E85g Buffalo Avenue, Niagara Falls, NY about 20 ft. northwest of  
 CLIENT GEOTRANS/EPA and DOJ existing Bore hole 4  
 DATE STARTED 4/25/86 COMPLETED 4/25/86

N = NUMBER OF BLOWS TO DRIVE 3 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

bsLOGGED BY Dale M. Gramza/Geologist

QUEST 1 OF 1A



Fieldman  
Copy

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WELL MW-22 continued

SURF. ELEV. \_\_\_\_\_

LOCATION Approx. 40 ft. from rip rap  
about 20 ft. northwest of  
existing Bore hole 4  
DATE STARTED 4/25/86 COMPLETED 4/25/86

CLIENT GEOTRANS/EPA and DOJ

DATE STARTED 4/25/86 COMPLETED 4/25/86

000497

N = NUMBER OF BLOWS TO DRIVE 3 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

bsLOGGED BY Dale M. Gramza/Geologist

SHEET 1A OF 1A

# DOCUMENT OUT

NAME

TITLE

DATE  
OUT

DATE  
IN

*Robert Baker*

GEOLOGIC AND WELL CONSTRUCTION LOGS

*3/1/88*

DATED: May 15, 1986

000498